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ABSTRACT

This paper compares the present official poverty measure with a relative measure of poverty. The comparison is made both conceptually and empirically. These two aspects comprise the two major parts of the paper. Within the first part, the conceptual section, various issues common to both poverty measures as well as the measures themselves are discussed. In the empirical section, both poverty standards (official and relative) are used to examine the extent and incidence of poverty. Particular emphasis is given to geographic comparisons in the incidence of poverty among families and how the incidence has varied between 1967 and 1974. In addition, attention is given to how the choice between measuring family income on a national versus state average affects the geographical distribution of relative poverty. The paper assumes some familiarity with the Federal government's official statistical poverty measure. It is recommended that readers refer to "The Measure of Poverty", a multi-paper report prepared by an Interagency Poverty Studies Task Force, for additional information on this subject. (Author/AM)

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THE MEASURE OF POVERTY

Technical Paper XIV
Relative Measure of Poverty

By: Stanley Stephenson, Jr.

U.S. DEPARTMENT OF HEALTH,
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DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
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March 31, 1977

Mary Berry
Assistant Secretary for Education, Designate
Department of Health, Education and Welfare

Henry Aaron
Assistant Secretary for Planning and
  Evaluation, Designate
Department of Health, Education, and Welfare

I am pleased to issue Technical Paper XIV, "Relative Measure of Poverty." It contains supporting data for the report entitled The Measure of Poverty which was prepared in compliance with section 823 of the Education Amendments of 1974. It presents the views of the individual author and not those of the Task Force as a whole or of its particular members.

This paper compares, both conceptually and empirically, the present official poverty measure with a relative measure of poverty. In the conceptual section selected issues common to both poverty measures, and to the measurement of poverty in general, are discussed. The empirical section gives particular emphasis to geographic comparisons in the incidence of poverty among families and how the incidence has varied between 1967 and 1974. Attention is focused on the ways in which measuring family income on a national vs. state average affect the geographical distribution of relative poverty.

Bette Mahoney

Bette Mahoney, Chairman
Poverty Studies Task Force

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Comments from Professors Ed Budd of Pennsylvania State University and Robert Plotnick of Bates College were also helpful. Special thanks to Bernice Cravin for computational assistance and Julie Mitchell for editorial assistance. Responsibility for the opinions of the paper remain mine alone.

PREFACE

Section 823 of the Education Amendments of 1974 (PL 93-380) requires a thorough study of the manner in which the relative measure of poverty for use in the financial assistance program, authorized by Title I of the Elementary and Secondary Education Act of 1965, may be more accurately and currently developed.

That financial assistance program is administered by the Commissioner of Education, through the Office of Education, Department of Health, Education, and Welfare. An important feature is the use of a formula prescribed by Section 103 of the Elementary and Secondary Education Act for the annual distribution of Federal funds to school districts. A significant factor in the formula is the number of school-aged children 5 to 17 in poor families within each school district. The measure of poverty which is used, and which is the subject of the study mandated by Section 823, is the Federal government's official statistical definition of poverty (also known as the Orshansky, OMB, Census Bureau, or Social Security poverty lines).

Other work related to poverty measurement has been called for in recent legislative acts. In the Comprehensive Employment and Training Act, the Secretary of Labor is directed to develop and maintain comprehensive hourhold budget data at different levels of living, including a "level of adequacy." Any such review of the level of adequacy must necessarily be closely related to measures of poverty. The Housing and Community Development Act of 1974 gives the Secretary of HUD authority to adjust the poverty measure to reflect local variations in the cost of living. The Conference Report accompanying it directs the Secretary to develop or obtain data with respect to the "extent of poverty" by metropolitan areas and to submit such data to the Congress as part of a March 31, 1977, report.

Because of the broad scope of the subject matter, coverage of the study of the measure of poverty mandated by Section 823 of the Education Amendments of 1974 was extended to include implications of the study findings for the poverty-related programs of all affected Federal departments and agencies. The Title I program of the Elementary and Secondary Education Act was given the most detailed treatment, to meet the legislatively-mandated specifications for the study as well as to serve as a primary example of application of the concepts of poverty measurement to Federal programs. The findings of the study are published in a report entitled, "The Measure of Poverty." An important objective of the study was full discussion and documentation of the major elements of currently applied and potentially usable poverty measures. Material containing essential supporting documentation for the study was assembled as technical papers. These have been written to stand alone as complete technical treatments of specific subjects.

The study was performed under the direct guidance of a Poverty Studies Task Force of the Subcommittee on the Education of the Disadvantaged and Minorities, Federal Inter-Agency Committee on Education. Technical papers were prepared at the request of, under the direction of, and subject to review by the Task Force members. Some papers are primarily the work of one or two persons; these are attributed to their authors. Others result from the collective input of Task Force members or advisors and no specific attribution is given except to the Task Force, as a whole.

The following listings show members of the Poverty Studies Task Force by appropriate Federal departments and agencies, and the titles and authors of the technical papers.

This report contains Technical Paper XIV, Relative Measure of Poverty. It was prepared by Stanley Stephenson, Jr., Department of Economics, Pennsylvania State University.

To obtain copies of the report, "The Measure of Poverty," or any of the technical papers, please write to:

Office of the Assistant Secretary for Planning and Evaluation
Department of Health, Education, and Welfare
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Federal Interagency Committee on Education
Subcommittee on Education for the Disadvantaged and Minorities

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TECHNICAL PAPERS

I.	Documentation of Background Information and Rationale for Current Poverty Matrix	Mollie Orshansky Social Security Administration
II.	Administrative and Legislative Usages of the Terms "Poverty," "Low Income," and Other Related Terms	Poverty Studies Task Force with assistance from Ellen Kraus
III.	A Review of the Definition and Measurement of Poverty	Urban Systems Research and Engineering, Inc.
IV.	Bureau of Labor Statistics Family Budgets Program	Mark Sherwood Bureau of Labor Statistics
V.	The Consumer Price Index	Jill King Mathematica, Inc.
VI.	Wealth and the Accounting Period in the Measurement of Means	Nelson McClung and Eugene Steuerle Department of the Treasury
VII.	In-Kind Income and the Measurement of Poverty	Janice Peskin Health, Education, and Welfare
VIII.	The 1972-73 Consumer Expenditure Survey	Jill King Mathematica, Inc.
IX.	Inventory of Federal Data Bases Related to the Measurement of Poverty (a) Non-Census Data Bases (b) Census Data Bases	Connie Citro, Mathematica, Inc. Bureau of the Census
X.	Effect of Using a Poverty Definition Based on Household Income	Jack McNeil, Doug Sater, Arno Winard Bureau of the Census
XI.	Update of the Orshansky Index	Mollie Orshansky Social Security Administration
XII.	Food Plans for Poverty Measurement	Betty Peterkin Department of Agriculture
XIII.	Relative Poverty	Jack McNeil Bureau of the Census
XIV.	Relative Measure of Poverty	Stanley Stephenson Health, Education, and Welfare
XV.	Analytic Support for Cost-of-Living Differentials in the Poverty Thresholds	Thomas Carlin Department of Agriculture
XVI.	Implications of Alternative Measures of Poverty on Title I of the Elementary and Secondary Education Act	Abdul Khan and Herman Miller Health, Education, and Welfare
XVII.	The Sensitivity of the Incidence of Poverty to Different Measures of Income: School-Aged Children and Families	Survey Research Center University of Michigan
XVIII.	Characteristics of Low-Income Populations under Alternative Poverty Definitions	Lawrence Brown Health, Education, and Welfare

CONCEPTUAL SECTION

Defining and measuring poverty has been an explicit task of the Federal government for more than a decade. Because a considerable amount of Federal funds are disbursed on the basis of the main poverty definition used by the government, it is important periodically to examine the way poverty thresholds are established.

In this paper a main concern is the comparison of the present official poverty definition with a relative measure of poverty defined as one-half median family income. The comparison is made both conceptually and empirically and these two aspects comprise the two major parts of the paper. Within the first part, the conceptual section, we discuss issues common to both poverty measures as well as the measures themselves. Readers who are less interested in background issues, such as defining income, may wish to skip parts of the conceptual section. Next, in the empirical section, we use both poverty standards to examine the extent and incidence of poverty. Particular emphasis is given to geographic comparisons in the incidence of poverty among families and how the incidence has varied between 1967 and 1974. In addition, we focus on how the choice between measuring family income on a national versus state average affects the geographical distribution of relative poverty. Such decisions, it is shown, have significant implications for the distribution of Federal funds based on poverty standards. The paper assumes some familiarity with the Federal government's official statistical poverty measure. Readers might wish to refer to The Measure of Poverty, a report prepared by an Interagency Poverty Studies Task Force for additional information on this subject.

This paper was prepared as a technical paper to that report to provide further elaboration on the subject of relative versus absolute poverty measures. Some conceptual material common to all poverty measures is repeated here for the sake of completeness and because of the high degree of relevancy to the subject at hand.

Selected Issues in Defining Poverty

Poverty can be defined in economic terms or in a social or cultural context. In this inquiry we examine only the former. Within economic definitions of poverty two central questions are: (1) How is the poverty standard established? (2) How does it vary over time? Depending on how one answers these questions, a relative or an absolute definition of poverty can be established. In the extreme, these definitions reflect, respectively, concern for relative deprivation and minimal consumption needs. In either case a convenient method of measuring poverty involves a measure of income, e.g., a person is poor if his income for a period is below that considered adequate for minimal needs or he is poor if his income is below a certain percentage of the average income for his community. Defining and measuring income is thus central to defining and measuring poverty.

Defining Income

Because, as will be seen, relative poverty measures are based on prevailing income and consumption levels, it is useful to examine various concepts and problems associated with measuring income. The discussion that follows is an attempt to draw together, informally, selected issues involved in defining income since these issues, if poor counts are determined by income thresholds, may alter poor counts. Many of these issues are also discussed in the main body report, The Measure of Poverty in several technical papers which accompany that report. We first develop a theoretical income definition and then compare this income concept with the total money income concept used by the census.

Two theoretical approaches to the problem of defining income have been developed. The first approach is from the public finance literature and is more concerned with ability to pay. 1/ In this approach, all benefits are not usually considered in making tax adjustments between individuals so as to achieve a degree of fairness, i.e., treating equally situated persons alike. In this case, income for a year would be the sum of received wages, interest, rents, dividends, entrepreneurial income, and net income gains, but would not include the cash value of food stamps received or the health hazards associated with, for instance, air pollution. A second theoretical approach to income definitions is concerned with ability to consume. Both approaches are concerned with many of the same issues, but it is the second one that is more directly aligned with an attempt to measure poverty. For instance, economist Sir John R. Hicks has written:

> The purpose of income calculations in practical affairs is to give people an indication of the amount which they can consume without impoverishing themselves. Following out this idea, it would seem that we ought to define a man's income as the maximum value he can consume during a week, and still expect to be as well off at the end of the week as he was at the beginning. 2/

Whether or not one agrees with Hicks' observation regarding the purpose of measuring income, the main analytical problem is how to derive from his abstraction an operational definition of income. A number of specific issues must be addressed in any such attempt. These include: the time period over which income is measured, when income is measured, several issues which may require income to be estimated or imputed, choice of reporting unit, and family size adjustments. This list of issues is selective, yet touches on most of the major conceptual problems in defining income. Measurement problems, especially income underreporting, are obviously related, but are not systematically discussed here.

Time Period

Hicks arbitrarily selects a week as a time unit, yet there is no reason why one could not refer to monthly or to annual income or, indeed, to even a lifetime. Note that we refer to the week as the time unit in which we estimate income, or the "accountable period." This is not the same as how often we measure income, or the "accounting period". 3/ Consider an example involving earnings, a component of income. If one worker receives $10 per day on a daily basis for 20 days a month and a second worker receives $200 per month on a monthly basis, measured income could vary between the workers if they were asked what earnings they had received in the last day or week. But, if asked for earnings last month, there would be no difference. A related issue is when income is received, or more exactly, when the receipt of income and payment of expense is recorded. In the example cited, if the first person receives each day his pay of $10 per day, his earnings for a 20 day month would still be $200. If the second worker performs his job one month but is paid his $200 two months later, should the income and any expenses of worker two be counted for the month the cash is received, a cash basis, or should the net income be associated with the month in which the income was earned, an accrual basis. The point is that income is a dynamic concept which implies a flow of net receipts over time. If there are no changes over time in relative prices and interest rates and if the flow of receipts is fixed, a first income definition is the capitalized value of prospective receipts. If we vary the length of the accountable period, then income may vary directly (more receipts) and indirectly (likely changes in interest rates and relative prices). If the latter change, income is the maximum amount one can consume in one period and still expect to consume the same amount in each ensuing period. 4/

In the discussion of other issues in defining income, such as the imputed income from assets, it will be shown that the choice of time period is a general issue that affects other income components. In fact, it might be argued that time is the most important aspect in defining income because a future receipts concept of income recognizes both the future consumption potential of a present investment and the inherent arbitrariness of defining income in relation to a particular slice of chronological time. 5/

Ex Ante Versus Ex Post Measurement

To the perceptive reader, it is probably clear by now that the writer has focused exclusively on potential consumption as estimated prior to the beginning of a time unit. If poverty is defined according to income level, do we define a person as poor if he is expected to be poor or whether he has been poor? The two are related, but are separate concepts which have significant programmatic implications. Attention to ex ante or prospective income reporting is consistent with the theoretical goal of predicting economic behavior based on individual income expectations. Strictly speaking, Hick's income definition is an ex ante concept because income is what a person can expect to consume and be as well off after the period as before the period. Nothing need be said about whether or not these individual expectations are actually realized. Yet, the possibility exists that actual receipts may have exceeded or fallen below predicted receipts. This windfall gain or loss, when used to adjust income ex ante, is called income ex post; the latter equals consumption plus capital accumulation and can be measured only at the end of the accountable time period. For purposes of social accounting, income ex post is preferred because it is objective. In such a manner, historical economic progress can be measured for a nation. However, to the extent ex post income contains a consumption estimate based on subjective price estimates, it too retains a degree of subjectivity. For purposes of easing the plight of persons currently poor, income ex ante may be preferred, especially if the accounting period length exceeds particular program goals.

Having established that income varies according to the length of the time period accounted, we should point out that there are several opinions regarding what time period should be used. At one extreme are anti-poverty program needs which are based on short-run income reporting of less than one year. Recall problems associated with measuring income may be reduced by shorter periods, or more accounting periods. Yet, wide swings in income level with annual reporting involves considerable changes in poverty counts 6/ and periods less than one year will presumably have even wider swings. Some economists, notably Milton Friedman, believe that the individual's permanent, or long-run income, is the most important determinant of current consumption potential. Lifetime income, properly discounted, may be one extreme of a permanent income measure. In this report, we focus on annual income because of the availability of annual data.

Imputed Income: The Valuation of Goods and Services

A second issue in measuring income concerns individual estimation of prices. There are several aspects to this issue and two are discussed here. Implied in the above conceptual definition is the idea that the individual obtains price information in perfect markets, to use with observed quantities of goods and services so as to calculate an expectation of future receipt value. But, there is no reason for individual perceptions to be accurate or consistent between one person and another. Also, there is no real reason for perfect market conditions to operate and, if they did, to provide, regularly and globally, relative price information without cost. Therefore, we are forced in some sense to accept the concept that individual income depends on individual preferences and expectations. This dependence, however, is quite an unfortunate state of affairs for social income accounting.

Consider the problems of estimating the value of economic activities and compensation in-kind. The former may include so-called non-market activities such as raising vegetables, cutting one's hair, or teaching one's children. Such activities may increase the level of one's consumption, and hence increase one's income. Yet, the issue in question is the amount of income increase. Is time spent teaching a child to be valued in terms of a tutor's wage? If vegetables raised in one's garden are valued at market prices, should a value be attached to shrubs or trees grown at home? Leisure time itself may have value in terms of foregone earnings, yet what amount of non-work time is leisure and what is required to restore the body and maintain good health? Also, what is the appropriate wage to use in valuing leisure? Whether a housewife doesn't work for wages because she considers the value of her time at home above the labor market wage or whether she doesn't work because she lacks the skill and experience to be offered a market wage is very difficult to determine. Yet, each alternative implies a different value of leisure time. 7/ Other types of economic activities which enhance individual consumption, but contain problems of estimation, include the broad range of government-sponsored services such as public education and other public goods which may not have exact and direct substitutes in the private sector.

Similarly, consider the problem of compensation in-kind. Simons relates a tale by Kleinwachter which is relevant. 8/ Two military officers of the same rank receive the same cash pay. The first officer is stationed in the field, the second assigned to the prince's castle. The latter receives fine food, pleasant quarters, and accompanies the prince to the opera. Thus, one might argue that the effective income of the second officer exceeds that of his counterpart. By estimating values of his in-kind compensation, one might even attempt to compute cash-equivalent values for these goods and services and add these values to his cash income. But wait, suppose the second officer hates opera and is allergic to the feather bed on which he must sleep. How then is his income estimated?

The situation is nearly hopeless because it is so subjective. Indeed, if one shifts attention to the current American scene, what is the best way to estimate the value of the variety of in-kind economic activities and in-kind compensation which individuals and their families enjoy? The main point to this discussion of valuation is to suggest that a single, theoretically preferred, income concept may not have an exact and objective empirical counterpart. An important study that did attempt to estimate income-augmenting aspects of several economic activities is that by Ismail Abdel-Hamid Sirageldin. Results indicated that full income, defined to include market and non-market output, is distributed more equally than money income. That is, persons with low money incomes tend to produce more non-market goods and services than high income persons. More explicit poverty implications, however, were not developed. 9/

A second aspect to the problem of price estimation concerns comparisons between real and money income. Consider, for example, regional cost-of-living differences. Assume two consumers living in two regions who have very similar tastes and initially have the same nominal income and face the same set of average retail prices; that is, they consume the same bundle of goods and services. If over time, average retail prices rose in one region faster than the second region, other factors being equal, the real income of consumers in the first region will have fallen relative to real income in the second region. The exact nature of such changes is mainly empirical and little evidence exists to date on changes in regional price differentials. A recent study did find evidence that changes in prices for similar goods differ between regions, which suggest that differences exist in real incomes between regions. 10/

Presumably, the original Hicksian income concept implies no money illusion. That is, if money incomes rose in the same proportion as the increase in prices of goods, consumers would not be fooled into believing themselves better off.

Imputed Income: Assets

Income ex post equals consumption plus the changes in the value of the individual's wealth. Excluding human capital, we can divide wealth into physical and financial assets. The former may also be considered consumer durables because they are goods which are not totally used or destroyed within the accountable period. Recall that income is not the maximum amount an individual can spend in a time period. Rather, it is the maximum amount he can consume and expect to be as well off after as he was before the time period. If some consumption is from consumer durables purchased in a previous time period, then consumption may exceed expenditure in a period. If expenditures are made within the time period, then consumption may be below expenditures. The issue is how to value the consumption of consumer durables when three problems arise: their time of acquisition may vary, their time-rate of utilization and wear may vary, and the market for used consumer durables may not yield precise price information. 11/

Consider the case of owner-occupied houses. One argument calls for imputing a rental value and adding that value to the income of a person who lives in a home which he owns. The rationale is that he consumes in a period a flow of house services from a house purchased in a previous period. By considering the rental price for similar houses one can estimate the increment to the home owner's consumption. Of course, if one is to impute a flow of service value, then one should also consider the costs of maintaining this service flow so as to arrive at a new value of house consumption services. However attractive this step might be from a conceptual standpoint, the inherent costs and administrative feasibility of such a procedure would certainly have to be carefully examined.

Consider next financial assets. These may yield a cash flow in the form of dividends or interest that should be added to individual income. In addition, the market price of the asset may change between the beginning and the end of the period. Because the change in the value of an asset in one period may affect consumption in that and subsequent periods, the amount of the value change should be added to (or subtracted from) our definition of income ex post.

A similar value change may occur for some physical assets due to shifts in relative prices for used assets and due to difference between assets in expected length of use. Moreover, the individual may at some time during the period sell all or some of the financial or physical assets he had acquired previously. The capital gains from such a transaction should also be included in an income ex post definition.

A central problem to imputing a value to assets is, thus, selecting what is an appropriate time period in which the asset is held. Taussig and Weisbrod-Hansen assume that the family sells and consumes net worth evenly over its expected lifetime. But how is the expected lifetime determined? Also, is a smooth annuity return a reasonable assumption for all assets?

Jointly considering these three income aspects of physical and financial assets involves a considerable amount of administrative judgment and expertise, as well as a current and regularly updated set of prices. The New Jersey and rural income maintenance experiments did attempt to consider questions of imputed income from assets, capital utilization rates, etc. Based on these attempts one author concluded that overcoming these judgment problems may create more problems than are solved. 12/ Instead, it may be preferable simply to consider the income increment from physical and financial assets as equal to a designated yield, such as an assumed rate of interest times the value of the stock of assets. Different yields may be preferred for different classes of assets. The feasibility of this alternative is probably greater than the tedious set of steps described above and the amount of judgment involved may not differ very much. Either alternative, however, might be preferred to the census practice of not including much of the income from assets.

Imputed Income: Transfers and Gifts

Non-market exchanges of cash or goods and services between economic units may alter their ability to consume and, thereby, to alter their income. Some may argue that transfers, regardless of whether they occur between a government and an individual or between two individuals, should not be included in an income definition because they represent no net gain to society. 13/ Others point out that including gifts in an income definition might cause rich donors to give less to poor persons because the latter with higher incomes will have higher taxes. 14/ Yet on equity grounds, there is no reason to exclude gifts and transfers from an income definition. To the recipient, there is no difference in the incremental consumption enabled by receipt of cash from a family member, a check from a welfare office, or a check from the individual's employer. A related problem is the estimation of income from public transfers as well as adjustments for the private costs of these transfers.

Imputed Income: Taxes and Government Benefits

It is generally agreed that the ability of the family to consume, or family well-being, is better measured after taxes are paid than income before taxes. Government benefits do enhance well-being, but the distribution of benefits is not assumed to be reflected in any regular fashion by the distribution of government taxes. 15/ Ideally, we would like after-tax income combined with government transfers, yet several problems exist. First, exactly how are all paid taxes to be estimated when so many different types of taxes are paid to Federal, state, and local governments or their agents? For example, one may agree that Federal income tax payments should be subtracted from before-tax income, yet the Internal Revenue Service definition of a tax unit is not exactly the same as the census definition of a family unit. In order to subtract IRS taxes from census money income, comparable reporting units need be defined. Also, the IRS concept of taxable income is distinct from the census money income concept. 16/ Similar problems may exist with other types of taxes paid.

On the benefit side, some government transfer payments such as Social Security benefits, Unemployment Insurance payments, and various public assistance programs such as Aid to Families with Dependent Children, or Supplemental Security Income can simply be added to money income before transfers. For other types of government benefits, substantial measurement problems exist in estimating exactly the value of government services. What is the exact value of national defense, street light provision, and Kennedy Center concert subsidies? A rough guide in this matter is that when private sector alternatives exist, such as food stamps, Medicaid, etc., estimates may be made of the value to the individual of an in-kind government transfer. 17/ When no private sector substitutes exist for government expenditures, such as manpower training or public goods, estimation of the income contribution is more problematical. 18/ Thus, we see that achieving the ideal goal of after-tax, after-transfer income may require a considerable amount of intermediate effort and judgment. 19/

Choice of Reporting Unit

The above discussion has been made in terms of an individual. However, recent economic theories of consumer behavior have stressed the family as the appropriate unit of analysis. Conceptually, the important issue involves several persons within a family "pooling" their economic resources (including time). Because pooling is the key to the formation of an economic unit, ideally a family could be comprised of any group of individuals who live together and pool economic resources, responsibilities, and activities. Note that this concept of a family is distinct from the census-defined reporting unit of two or more related persons living in a household.

Equivalent Income

The definition of income we discussed above, consumption plus capital accumulation, was developed in terms of a single individual. Having next suggested that the preferred unit of analysis is the economic family, we are confronted with the problem of how to compare the incomes of families of different sizes. For example, if two families are similar in many aspects, including the same income, but differ in family size, an argument could be made that the members of the larger family are less well-off than members of the smaller unit because of the disparity in available per-capita consumptions. How one answers the question of what is an equivalent income for families of different size is mainly an empirical issue. Still, the issue has implications with regard to poverty measurement. In the empirical section we again refer to the question of equivalency scales in measuring income.

A main conclusion we come to in this section is that a simple operational definition of income which would be accepted by many economists would be the sum for a period of cash received, non-cash receipts which affect potential consumption, and the ex post value of the services from the individual's stock of physical and financial assets. The cash portion of income is thus wages, including wages from owned businesses, rents, dividends, interest, and cash transfers. In addition, some value for non-cash transfers, non-market economic activity, and imputed yields assets would be included. Gifts should be added. Taxes should be subtracted from this gross income figure and income equivalents computed for economic families of differing sizes and locations. Finally, incomes should be adjusted for price changes over time and space.

This conceptual definition of income is less complex than it could be because several issues are not addressed. These include: (a) differential inflation adjustments of the components of income such as the choice of the proper inflation weight in determining capital gains on an asset sold at the end of the period, (b) accounting period adjustments for asset acquisition (or asset sales) made during the reporting period, (c) accounting period adjustments to distinguish realized versus accrued income, (d) service flows from stocks of human capital not already counted in wages and salaries, and (e) life-cycle effects that influence the variability of income measured over a long period. These refinements are beyond the scope of this paper. Still, the definition includes the essential components of income and as such will serve as a benchmark against which to judge how income is measured in government reporting.

Comparing Conceptual Income with Income as Measured by the Census

At present, the practice of the Bureau of the Census is to develop a statistical measure of annual money income as determined either by the March Current Population Survey (CPS) or the Decennial Census. The measure includes the sum of earnings, self-employed income, Social Security and public assistance payments, dividends, interest, rent, unemployment insurance and workmen's compensation, pension payments, alimony and other regular contributions from persons not in the household.

How do these measures of income compare with the conceptual definition we outlined above and how are poverty measures thus affected? 20/ First, the link between income and poverty is the emphasis on consumption in the Hicksian income definition. That is, the neoclassical theory of consumer choice uses a budget or income constraint to separate all consumption combinations into attainable and unattainable bundles of goods. Poverty may thus be defined as the inability of a spending unit to command sufficient income-generating resources so as to be able to consume what society considers a minimally adequate bundle of goods and services. How one measures income is thus very central to how one measures poverty.

To the extent that it is important to define poverty according to an ability to consume, the census income data are an inadequate means of counting poor persons for several reasons. First, not adjusting income to reflect values of service from assets may bias upward measures of poverty counts, especially the number of aged poor. Similarly, capital gains and losses should be included. Secondly, irregular income is totally excluded which underestimates income. Insurance benefits are a case in point. Thirdly, after tax, not before tax, income should be used to measure ability to consume; however, the census income measures are available only with income before taxes. To further complicate matters, the census adds the value of cash transfers to the pre-tax income. Transfer payment inclusion may be appropriate if taxes, especially income taxes, are also included; but, to blend pre-tax income with transfer payments overestimates actual income. A fourth problem is that the census income definitions exclude non-cash transfers. Clearly free medical assistance, food stamp bonuses, housing vouchers, tuition payments, and school lunches enhance one's range of consumption choices and should, therefore, be included in an income definition. Also, employer-paid fringe-benefits should be included. Finally, home-produced goods and non-market services are not included in the census income definitions. If poverty is defined as having insufficient income to consume what society considers a minimally adequate basket of goods, then a definition of income should be used which adds the value of in-kind goods and services received by the individual (or family) to his money income. The problem is how to value economic non-market activities and compensation and transfers in-kind.

We have listed a number of problems with the income data currently available from census surveys. Measurement problems and data shortages preclude immediate adjustments in the official income measure to account for many of the above issues.

Defining Poverty in an Absolute or Static Sense

Earlier we defined poverty as lacking the means to enjoy a potential consumption level at least as great as that deemed minimally acceptable to society. In this country, direct consumption-based poverty thresholds are developed by extending normative food plans. As we shall see, there are a number of methodological problems with this approach. Key aspects in the discussion in this section will be who sets the standard, how do they set the standard, and whether variations are made over time.

A first absolute definition of poverty is that obtained by choosing a certain constant dollar value to serve as a poverty standard to compare with a reporting unit's measured income. Such a measure is invariant over time, or at least invariant over the short run until a new standard is set. As we shall see in a later section, poverty thresholds set in this manner are still used today to distribute Federal funds. The primary advantage of such absolute poverty standards is that they are convenient, easy to reproduce, and fairly easily understood. Yet, such standards are conceptually crude and arbitrary. Adjustments in this poverty standard for family size and other needs criteria are usually ignored. These reasons preclude serious advocacy of such absolute measures on other than practical grounds.

A second absolute poverty standard, one that is more prevalent in the poverty literature, is that associated with attempts to determine the cost of a physiologically-determined minimum bundle of goods and services. Presumably, such a bundle of needs is relatively invariant over time. The main problems with this measure are the choice of items to include in the bundle and how to keep current the cost of the bundle. There have been several attempts to establish poverty standards using scientific techniques to derive the bundle of goods or market basket.

One of the first attempts to set an absolute poverty standard based on a market basket was that of the American nutritionist, Atwater. His turn-of-the-century experiments sought to identify that minimal dietary level of food that would result in no weight gain or weight loss. He performed tests on American convicts in order to arrive at such dietary intake levels in caloric values. The Englishman, Benjamin S. Rowntree, extended Atwater's work by determining the market value of the food required to achieve the minimum requirements. Rowntree's step enabled him to derive a low-cost food plan which served as the basis for his definition of poverty. 21/

There are several problems with subsistence-food based poverty definitions. First, the obvious consequences of failing to achieve such standards make this a very short-run poverty concept which holds a mainly historical importance for relatively developed nations. Secondly, there can arise wide variation between experts regarding exactly how to measure nutritional adequacy; there are an infinite number of dietary combinations and costs that yield a specified number of calories. Furthermore, exactly how to make equivalency adjustments to reflect sex, age, regional price-of-food differentials, individual activity level, etc., is another problem area. Next, many observers feel that a subsistence food level is an inadequate standard on which to base a poverty definition. The criticism is generalized to any food-based standard. Explicit consideration should also be given to minimum levels of other goods and services such as housing, clothing, medical assistance, and even education. Thus, one can conceive of an entire range of market-basket-based poverty standards. In spite of these problems, the present official Federal statistical poverty definition can be viewed in some sense as an extension of the Rowntree methodolcgy. However, this extension includes family type adjustments, normative (not subsistence) food plans, annual CPI price adjustments and indirect consideration of other goods via inflating food plan costs.

A "Relatively Absolute" Poverty Standard

The current official poverty definition might be called a "relatively absolute" standard because it is absolute in the short run in real terms and relative over the longer run as food plans and other components change. The methodology for the official poverty standard was developed by Mollie Orshansky in the mid 1960's. 22/ Basically, the standard involves pricing a variety of normative family food plans developed, in part, by the Department of Agriculture. These food plans, reflecting individual nutritional adequacy intake levels, "economies of scale" for increasing family size, adjustments for age and sex of family head, and farm versus nonfarm residence, are multiplied by three on the assumption that food will equal one-third of the total budget. (This well-known ratio was derived from data obtained in one week in 1955: the average ratio of food expenditures to after-tax income of families with at least two persons was one-third.) These adjustments result in 124 different poverty thresholds depending on family size, type, and location. By comparing family income data from the March CPI to the poverty thresholds, official poverty counts are obtained.

Equivalency Scales in the Current Official Standard

An important element in Orshansky's poverty thresholds is the relationship between the various 124 poverty thresholds. For example, in 1973, a male-headed, nonfarm family of four persons with two children had a poverty threshold of $4,505 whereas a second four-person family with one child, but otherwise identical, had a poverty threshold of $4,666. Presumably, consumption needs of the two families are such that incomes of the two families are equivalent. Table 1 presents a matrix of income-equivalent percentages. The four-person, nonfarm family with two children and a male household head is the base family with a scale factor of 100. Replacing one child with an adult increases the scale factor to 104 which implies that a poverty threshold for the second family is about 4 percent above that for the base family. The main factor contributing to equivalency scale adjustments is family size. These mainly reflect the cost of food for families of different sizes (and composition).

The particular food plan chosen by Orshansky was originally devised for families of two or more persons from a Department of Agriculture 1955 Survey of Food Expenditures and previous work done by the National Research Council on adequate caloric intake per person. Orshansky generalized the food plans to fit "representative family types." The underlying equivalency standards thus reflect estimates of equivalency in food intake. Families of three or more persons were poor if their income was less than three times the economy food plan. For families of two, the multiplier was not 3 but 3.6, the inverse of 27 percent of after-tax income spent of food. In situations where no food plan cost estimates were available such as for one-person units, Orshansky had to make an assumption, viz., that the food cost equivalent was 80 percent of that for a two-person family. The one-person adjustment was made subjectively. Both one-person and two-person adjustments were intended to capture the notion that "...a straight per capita income measure does not allow for the relatively larger fixed costs that small households face." 23/

Table 1. Current Poverty Measure Equivalency Matrix

Size of Family Unit	Number of Related Children Under 18 Years Old						
	None	1	2	3	4	5	6 or more
NONFARM							
Male Head							
1 person (unrelated individual):							
Under 65 years	53						
65 years and over	48						
2 persons:							
Head under 65 years	67	74					
Head 65 years and over	60	74					
3 persons	77	80	84				
4 persons	102	104	100	105			
5 persons	123	125	121	118	120		
6 persons	141	142	139	136	132	134	
7 persons or more	178	179	176	173	169	163	161
Female Head							
1 person (unrelated individual):							
Under 65 years	49						
65 years and over	47						
2 persons:							
Head under 65 years	61	67					
Head 65 years and over	59	67					
3 persons	75	71	79				
4 persons	98	102	101	100			
5 persons	118	121	121	120	116		
6 persons	137	140	139	138	133	129	
7 persons or more	172	175	174	173	168	165	157

Table 1. (Continued)

Size of Family Unit	Number of Related Children Under 18 Years Old						
	None	1	2	3	4	5	6 or more
FARM							
Male Head							
1 person (unrelated individual):							
Under 65 years	45						
65 years and over	41						
2 persons:							
Head under 65 years	57	63					
Head 65 years and over	51	63					
3 persons	66	68	72				
4 persons	87	88	85	89			
5 persons	105	106	103	100	102		
6 persons	120	120	118	115	112	114	
7 persons or more	151	153	150	147	144	138	137
Female Head							
1 person (unrelated individual):							
Under 65 years	42						
65 years and over	40						
2 persons:							
Head under 65 years	52	57					
Head 65 years and over	50	57					
3 persons	64	61	67				
4 persons	83	86	86	85			
5 persons	100	103	103	102	98		
6 persons	117	119	118	117	113	110	
7 persons or more	147	149	148	147	143	140	133

Source: Mollie Orshansky, Office of Research and Statistics, Social Security Administration.

As mentioned, the original Orshansky method of deriving poverty counts remains essentially the one used today. Family composition estimates have been improved by 1960 and 1970 Census data. New food plan, food costs, and food expenditure information have also become available and are being used to update the components of the old measure. 24/ Yet the question remains as to whether or not the basic approach to equivalency scale derivation in the Census-Orshansky poverty counts is the best choice available. Except where practical administrative matters dictate, no one wants to return to the crude and arbitrary measures such as the 1964 Council of Economic Advisor Poverty threshold, $3000 for a family and $1500 for an individual. Yet, considerable judgment remains in the Orshansky approach. We turn now to two frequently heard criticisms of the approach: reliance on normative food consumption patterns and lack of geographic cost-of-living adjustments. We are particularly concerned with the validity of these criticisms in light of existing methodology and available data.

For many years, economists have been analyzing equivalency scale derivations using actual, not normative expenditure data. A fairly common assumption in equivalency scale derivation is to consider families of different size who spend the same percentage of their incomes on a set of expenditures equally well-off. Presumably, this assumption can be traced to Engel's original 1857 study of the relation of food expenditures to income level using a cross-section sample of households of varying income levels. A major conclusion of Engel was that food expenditures increase with income increases, but at a lesser rate. Because of this relationship, "...the proportion of the outgo used for food, other things being equal, is the best measure of the material standard of living of a population." 25/ Engel's conclusion, plus a general consensus that a minimal food plan could be estimated more easily than a subsistence plan combination of food, clothing, medicine, and housing, were the supporting elements to the idea that a welfare income standard could be tied to the proportion of income spent on food. However, there is no theoretical foundation to the assumption that families which spend an equal percentage of their income on a given item are equally well-off. 26/ Furthermore, the particular set of expenditures in question may be defined generally, restricted to necessities such as food, housing, and clothing, 27/ or further restricted to food alone: 28/ The choice is arbitrary. With these strong qualifications in mind, we next proceed to demonstrate how an applied economist might develop poverty thresholds using expenditure survey data.

Consider, for example, Figure 1 in which hypothetical Engel curves, graphical representatives of the expenditure/income relation for families of sizes four and five, intersect an "isoproportional line" drawn from the origin. Along the isoproportional line a constant proportion of income is spent on a particular set of expenditures. This means that at income levels Y(4) and Y(5) each family

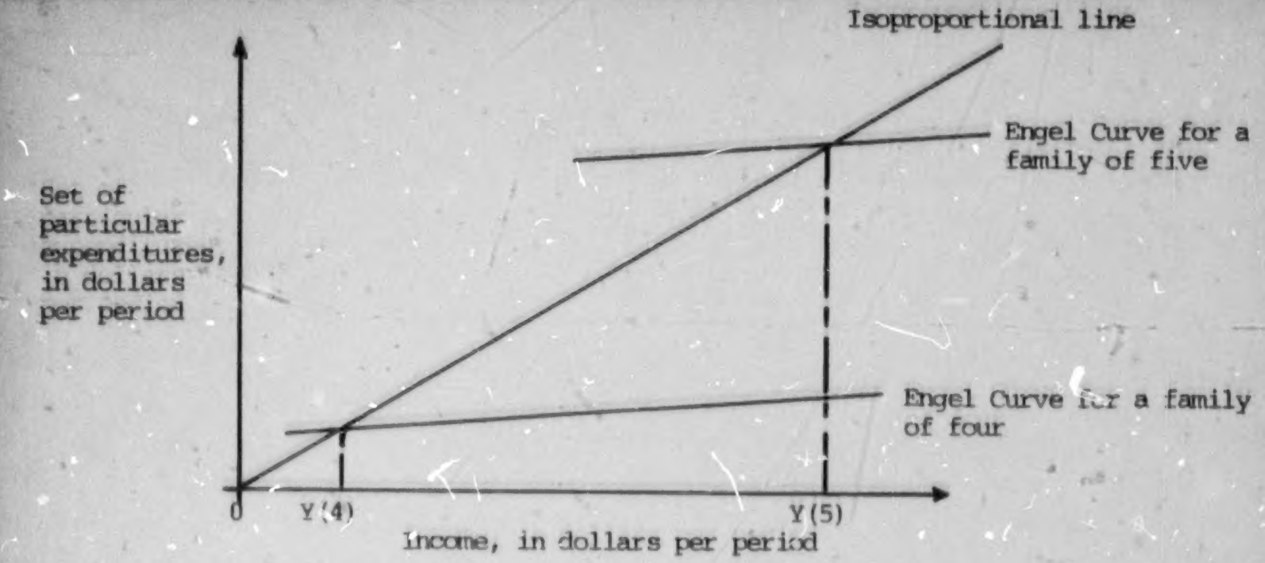

Figure 1

spent, 30 percent of its income on a certain set of items. This methodology assigns a particular family type, for instance, the family of four persons, an equivalence scale value of 100. For five persons, then, an equivalence scale value equals ([Y(5)/Y(4) - 1] x 100) percent greater than the family of four in order to obtain an equivalent level of economic well-being. If the family of four spent 30 percent of its income on food at a $4000 income level and the family of five spent 30 percent of its income on food at a $4500 income level, then a five-person family needs 12.5 percent more income to be exactly as well off as a four-person family.

According to proponents of this approach to equivalency scale construction, a main advantage is that it is more objective than computation of needs standards based on hypothetical budgets. Alternative expenditure sets and Engel curve specifications introduce some discretion on the analyst's part, but the use of actual versus normative standards considerably reduces the extent of analyst judgment. In other words, advocates of the isoproportional methodology might say actual food expenditures should be used, whereas the SSA technique develops food plan scales on the basis of what food should be consumed.

Table 2 presents examples of four income-family size equivalency scales. 29/ Column (1) presents the official poverty line which, as we mentioned, reflect normative food plan budget estimates with adjustments for small families. Columns (2) and (3) show, respectively, scales based on two bundles first identified by Watts: food alone and food, housing, clothing, and transportation. Seneca and Taussig developed the scales for these two bundles with a methodology closely related to that of Watts' isoprop method. Finally, column (4)

Table 2. Equivalency Scales ot Income by Family Size

	(1) Official Poverty Line (a)	(2) Food Expenditure (b)	(3) Necessities (c)	(4) Polled Scale (d)
No Children	1.00	1.00	1.00	1.00
One Child	1.19	1.01	1.07	1.12
Two Children	1.52	1.30	1.41	1.27
Three Children	1.79	1.64	1.62	1.30
Four Children	2.01	2.06	1.86	1.40
Five Children	2.48	2.59	2.13	1.49

SOURCE:

(a) U.S. Bureau of the Census, Current Population Report, Series P-60, No. 81, Characteristics of the Low Income Population 1970 (Washington, D.C.: Government Printing Office, 1971), Table N, p. 20. Based on figures for male head (under 65) nonfarm families.

(b) Derived from Joseph J. Seneca and Michael K. Taussig, "Family Equivalence Scales and Personal Income Tax Exemptions for Children," Review of Economics and Statistics (August 1971) Table 2, p. 257. Based on equivalences to a family of four with an annual income of $3000 in 1960. Necessities included expenditures on food, housing, clothing, and transportation; a list first developed and used by Harold Watts, op cit.

(c) Same as (b).

(d) Rainwater, op cit, Table 5-4, Column 2, p. 105.

shows an equivalency scale developed by Rainwater from survey questions designed to develop a response matrix of family size by minimum income needed to "get along."

Several observations can be made regarding the entries in Table 2. First, there is a remarkable similarity between the scales developed with the normative food plans and those developed based on actual food expenditures. Both scales suggest that a family with five children needs about two and a half times the income of a family with no children in order to achieve an equivalent level of well-being. Therefore, the criticism of SSA dependence on normative versus actual food expenditures may not be important. There is, however, a rather substantial difference between the food-based scales in column (2) and the entries for the food-plus other necessities in column (3) that involves "scale economies."

Scale economies refers to the possibility in economic production theory of achieving, for example, greater than a 10 percent output as all factors or inputs are increased by 10 percent. Thus, within a range of production, long-run average costs are expected to decline. In the present context, the cost of providing food to one person may involve purchasing a refrigerator, stove, etc., but the food costs associated with feeding two persons may be less than twice the food costs of person one due to "scale economies" e.g., a second stove is usually redundant. The problem is finding out exactly how to peg the equivalent family incomes so as to reflect these scale economies. This is not a new problem. Mollie Orshansky's 1965 "Counting the Poor" article refers to it several times. The SSA poverty standard uses food plans and equivalency scales associated with those plans that were developed by the Department of Agriculture. If one accepts the premise that a food basket is an insufficient means by which to establish a poverty standard and that food plus other expenditures on items such as housing and clothing are a preferred basis on which to build a poverty standard, then the central question is how the scale economies in the food basket standard compare with the scale economies in the augmented basket. If the per-individual savings in purchasing and preparing food are less than the per-unit savings in food expenses plus housing, then the present official standard overestimates the poverty lines of larger families.

In Table 2, we may compare the entries in columns (2) and (3) which show, respectively, the food alone basket versus the food plus other items basket. Seneca and Taussig interpret the difference as implying that relatively minimal economies of scale are found in food consumption. Their finding lends empirical support to Watts' earlier comment that the official poverty line methodology inappropriately assumes that the same scale economies found in food plans apply to all other consumption items. 30/ The result is an upward bias in official poverty thresholds, especially those for large families.

The fourth equivalency scale, that in column (4), is based on responses to a cross-sectional survey of 600 Boston individuals in a study directed by Rainwater in 1971. The data were processed and the entries in Table 2 derived using multiple regression techniques. Column (4) entries may be interpreted to show that Boston respondents felt that families of seven required only 50 percent more income than couples with no children. This 50 percent differential may be compared with the corresponding 150 percent income need increment implied in the official poverty lines. Rainwater's finding also suggests that the official poverty lines overestimate income needs of large families.

To summarize, the main problem with the equivalency scales used in the official poverty thresholds is not normative versus actual food expenditures. The main analytical concern is that restricting the derivation of equivalency scales only to food results in higher poverty thresholds for large families than would have resulted if the market basket included food plus other necessities.

Geographical Adjustments in Poverty Lines

A second critique of the equivalency standard used to compute official poverty lines involves lack of geographical cost-of-living differences: One standard is applied on a national basis. If needs and average retail prices vary by geographic region, it is inappropriate to use a single needs standard for all regions. This rationale suggests the poverty thresholds should be drawn more in line with regional-specific needs. The main question is how to develop these regional adjustments in equivalency scales. We consider three alternative procedures.

A first method of adding regional adjustments to the official poverty lines involves the use of region-specific price indexes to update the poverty lines. Since 1969 the method of updating the poverty lines has been to inflate annually the poverty lines by the Bureau of Labor Statistics' Consumer Price Index. A recent study by Akin and Stephenson 31/ used the same techniques and the same data used by BLS to develop the Consumer Price Index with the exception that in the former study price indexes were made specific to income class and geographic region. The resultant set of price indexes, especially those for geographic variation, could be used to update poverty lines regionally. The faults with this technique are nearly identical to the faults of the present use of the CPI. Initially, the same equivalency matrix of poverty cut-offs could be used. (Admittedly, analysts may debate as to when and how to begin.) Yet, over time, separate regional price indexes may adjust these original lines to reflect region-specific, cost-of-living changes. Region-specific adjustments may be crude, but they may be more accurate indications of real income disparities than the present alternative.

A second method of adding regional-specific price information to poverty lines also involves the changes in the poverty lines over time. In the period 1965 to 1969, the official poverty line was increased annually to reflect increases in the price of food. Since then, overall CPI price changes have been used to adjust upward the poverty line. This procedure is appropriate only if food prices move upward at the same rate as other prices. However, between 1972 and

1973, food cost increases were 14.5 percent versus the total CPI price changes of 6.2. Because poor families spend more on food than non-poor families, should the relations between food prices and the CPI continue, it may be necessary to consider the income distribution consequences of the current updating procedure. (I am indebted to Jan Peskin for pointing out that food stamp adjustments to food expenditures may be such that the poor may not spend more on food.) Returning to an overall food price increase method, or some variant such as updating the food component of the poverty standard by food price increases and the other components by a CPI less food prices, is one procedure. A second procedure, one more in keeping with making the current standard more sensitive to geographic food price differences, is to use the average annual retail food price information that is currently collected by BLS as an annual benchmark to food prices in most of the same locations used to collect prices to compute the CPI. Like the regional price index alternative, updating poverty standards by observing regional food price changes may involve only a marginal adjustment in the present updating procedure. (BLS emphasizes that their prices are intended for time-to-time rather than place-to-place comparisons. However, the explanation contained in the BLS "Estimated Food Prices by Cities," suggests that the annual benchmark prices average retail prices of food by city, might be marginally adjusted in a way to use for updating poverty standards.) Most criticisms of these alternatives are, therefore, also criticisms of the present (or any) updating method.

A third methodology for rendering the poverty lines more sensitive to regional cost-of-living differentials is that offered by Watts in his "isoprop" paper. Lacking price data, Watts was still able to obtain substitutions between items in a necessities bundle by allowing local variation in tastes, needs, and relative prices to be reflected in the sum of expenditures on food, clothing, and shelter when the sums were computed separately for major geographic regions. Watts' approach involved alternative Engel curve estimates with regional dummy variables when the dependent variable was measured by different bundles of purchased necessities. Regional equivalency indexes were thus derived from estimated regression coefficients.

There may be other problems connected with geographic differences which may make any of these techniques impractical or possibly administratively unsound. For example, geographic differences in need, income, or consumption among neighborhoods, cities, and counties may make differences among regions or states unacceptable for public policy purposes.

Nevertheless, the techniques mentioned here bear noting since they are related to analysis of differences in concept and application of relative and absolute poverty measures. Geographic differences, or differences by family size, which reflect consumption or income patterns may be more closely associated with relative than absolute poverty measures.

A parenthetical comment is probably in order at this point. The use of the current equivalency scales in the empirical section of this paper is done so as to concentrate on the effects of replacing median family income for the current standard. The methodological weaknesses in the existing equivalency scale derivations still hold. In subsequent research, the author hopes to derive alternative equivalency scales.

We conclude this discussion of absolute poverty standards by reiterating that such standards refer to an estimated minimal market basket of goods and services kept current in the short run by updating the cost of the bundle by the CPI and in the long run by altering the composition of the market basket. Several analytical problems in measuring poverty were discussed; these include measuring income, equivalency scale adjustments, and geographic cost-of-living adjustments. The feasibility of altering the current poverty lines to reflect geographic price changes is relatively high in the opinion of this writer, but others disagree. Changing the manner in which the government measures income was suggested, but this is not immediately feasible; many conceptual problems in defining income need first to be resolved. Several alternative family size/family income scales were examined and compared to the current scale used in the official poverty matrix. More research on and analysis of this complex topic is needed. We next turn to a fundamentally different concept of poverty.

Two additional problems with the current official poverty index were not stressed in the above review. First, the programmatic necessity of drawing a poverty line at some specific dollar amount seems to give these estimates an objectivity and specious accuracy that is illusory. Other poverty lines can be developed corresponding to lower or higher consumption standards. These can be bolstered with scientific surveys, but retain a large degree of arbitrariness. For, in the end, the choice of what must be included in the budget is made subjectively by the researcher. 32/

A second criticism concerns the means for updating the poverty lines. Although we discussed the measure as though food plan components were regularly updated, the fact is that the only way the official poverty lines have been kept current is to make annual adjustments only for price changes. No adjustments in the index are made to reflect changes in the living standard enjoyed by the general population. This second problem becomes clear when the poverty definition presented earlier in this paper is repeated: "Poverty (is) the inability of a spending unit to command sufficient income-generating resources so as to be able to consume what society considers a minimally adequate bundle of goods and services." Note the reference to social opinion. It is not likely that social opinion regarding poverty lines increases annually according to the CPI. Real income growth may be what the non-poor consider when estimating their economic well-being. As the average income of society grows, or society becomes more affluent, "needs" that are perceived by society will also grow.

The claim that public opinion regarding poverty lines rises over time has been made several times, notably many years ago by economists Schultz 33/ and Johnson. 34/ If this is true, then poverty is not best understood as an absolute standard. Instead, poverty is a socially relative concept such that "standards of poverty vary from nation to nation, from region to region, and from time to time." 35/

Empirical analysts considering the question of absolute versus relative poverty have sought to estimate the relationship between changes in poverty lines and changes in real income. The studies may be grouped into two categories. First, Robert W. Kilpatrick 36/ ingeniously examined time series data showing changes in various measures of income and how they affected a proxy for poverty line, the Gallup Poll response to the question: "What is the smallest amount of money a family of four (husband, wife, and two children) needs each week to get along in this community?" "Getting along" income is the poverty proxy. The second category of studies includes those which constructed time series of past budget studies and converted them into constant dollars. 37/

Both categories support the claim that poverty lines increase with the rise in average income after controlling for inflation. This suggests that poverty is relative to social needs.

These two criticisms of the present SSA poverty standard, an excess degree of subjectivity and failure to change to reflect social opinion regarding poverty lines, motivate consideration of an entirely different alternative poverty concept that is openly judgmental and adjusts for changes in real income.

Relative Poverty Standards

To many observers, poverty is a relative phenomenon that is best understood not by isolating a subgroup of the population, but rather, by viewing the subgroup in relation to society as a whole. Martin Rein distinguishes three concepts of poverty: subsistence, achieving and maintaining minimum consumptive levels; inequality, referring to relative income or relative consumptive aspects of poverty; and externality, the social consequences to the community from having a subset who are poor. 38/ Economic inequality and economic diseconomy concepts of poverty have different poverty definitions and poverty measure implications than economic insufficiency, the foundation of all of the absolute poverty definitions discussed up to now. It is to the former concepts that we now turn our attention.

The current official poverty concept implies that money income is a proxy for sufficiency in consumption. Therefore, a great deal of effort is made to establish links between the current cost of consuming a particular bundle of goods and an income threshold. An alternative view is that the families' income level in comparison to other income levels should be used to develop a relative measure of poverty. The assumption of the poverty-is-a-relative school is that there are specific levels of well-being attached to different income levels. 39/ However, the relative view of poverty and the consumption potential aspect of poverty are only indirectly addressed.

The Lowest Percentage

Perhaps the most purely relative poverty standard is that income cut-off which includes the lowest 10 or 20 or 25 percent of the income distribution. Choice of the exact percentage is arbitrary; yet, this definition is unambiguous and can easily be reproduced. Furthermore, it focuses poverty policy debate on income distribution. This focusing is considered a point in its favor by proponents of this standard (and a point against by its opponents). In some ways, however, the lowest percentage of the income distribution is not really a kind of poverty standard. Its main purpose, presumably, is to measure the composition of the bottom tail of the income distribution. By definition, the incidence of poverty under this measure is unchanging.

Income Shares

A next refinement in purely relative poverty standards is the share of total income received by some portion of the population with the lowest income. Using this method, a constant amount of poverty will be counted, as long as the shape of the income distribution remains unchanged. For example, for a number of years the sum of incomes received by the poorest 20 percent of the U.S. population has amounted to roughly 5 percent of the income total for the country.

This measure of relative poverty was begun well before the development of the official measures. For nearly sixty years, economists and statisticians have compared cumulative income distributions to cumulative distributions of families. This analysis, known as a Lorenz-curve analysis, has been used, however, to study poverty only indirectly: income distribution analysis and deviations from normative distributions are the main issues. Nothing is said about how poor is poor, either absolutely or relative to median levels of living 40/

Thresholds Based on a Percentage of Median Family Income

Some poverty researchers, especially Victor Fuchs, have advocated defining as poor any family whose income is less than a fraction of median family income. 41/ The exact value of the fraction is arbitrary, but 50 percent of median family income is often proposed and is a convenient figure for expository purposes.

Proponents of the median income poverty standard list several advantages of this definition. First, it is argued that poverty in a given year should be related to the annual output of a nation. The median income definition relates poverty to changes in real income, where real income is a proxy for changes in productivity. Secondly, use of median income poverty pinpoints national concern for poverty on the issue of income distribution. This point follows from the advocates's belief that the main issue in defining poverty is inequality, rather than absolute deprivation. More specifically, the point is that with Lorenz-type measures of poverty the entire income distribution is taken into consideration, whereas with the Fuchs-type, poverty line depends only on the shape of the distribution only among the lower half of the population. 42/ In addition, the Fuchs measure focuses attention on the income gap between those who have the least and those who have the average, an ordinary man. 43/ A third point raised by proponents of this standard is that theirs is an objective criterion of poverty. Use of a statistical measure eliminates dependence on the considerable amount of judgment required in poverty standards based on budget studies. Judgment is still required in the median income standard, but it is explicitly judgmental. Thus, policy debate could focus on choice of an appropriate percentage of median income or other distributional considerations. Finally, if poverty is defined according to an absolutely fixed standard, then poverty might possibly be "eliminated" in only a statistical sense because of the inability of the poverty standard to grow as fast as increases in the needs of individuals.

Several criticisms have been raised against relative poverty measured as a percentage of median income. First, this variant of a relative poverty definition addresses income distribution very poorly since it selects only one point on the income distribution. If shape or relative skewness of the income distribution is a concern, it is not clear that the median income concept of poverty is sufficient. This deficiency can be mitigated by considering "poverty gaps," the amount of money needed to bring all persons up to poverty threshold. Secondly, although advocates of the median income definition criticise the present standard of poverty for the amount of "excessive judgment" required, there are many judgments in the median income standard. For instance, what is the most appropriate fraction of median income to select? In addition, in measuring median income, should one select state median income or national median income? As we shall see, the choice has substantial effects on poverty counts in individual states. Also, should separate family median income measures be made for families according to sex of family head, ethnic origin, family size, and age of head? Similarly, the methodological issues reveiwed earlier, such as appropriately defining an income measure or developing equivalency scales for family type or geographic area, are still problems in the median income standard. The main point, however, is that such choices are openly made in the belief that poverty is relative to socially set needs. Finally, what some persons feel is the most serious criticism of the median income concept as a poverty standard is the chance that such a measure might count fewer poor if, for some reason such as a recession, the overall income median fell even though more families were absolutely worse off than before. Actually, this possibility is not that certain: it depends on what happens to the other parts of the income distribution.

A Final Note on Absolute Versus Relative Poverty Measure

In some ways the absolute and relative measures of poverty should be considered not as alternatives, but as complementary means of evaluating a similar problem. Income inequality and absolute deprivation criteria are both important aspects to consider in measuring anti-poverty progress whether they are due to specific social legislation or overall economic growth.

The idea that both relative and absolute poverty concepts are important is associated with the idea of a poverty band rather than a poverty line. No one precise dollar figure is equally valid for all uses. One authority, Lester Thurow, observed, "Given the data inadequacies inherent in any income measure and the estimating errors that emerge, whatever definition is selected, the search for a single poverty line is utopian at best." 44/ However, his point should not be interpreted as suggesting that the goal of defining and measuring poverty should be abandoned due to lack of refined income data and other particular statistics. The present standard of poverty is necessarily very specific for some program needs. It can be improved in several ways including better income data, revised food plans, and consideration of alternative updating procedures. In its present form, it is an absolute measure of poverty. However, if a poverty standard reflects the norms of society, and presumably society can express their opinion via the political process, then the present SSA standard of poverty can be accepted for the time being as the social definition of poverty. 45/ The important point is the time frame of reference, yet the issue bears further examination.

An empirical investigation of the absolute versus relative poverty issue is found in the Kilpatrick article referenced above. 46/ To examine this issue he used time series data relating changes in poverty lines over time to changes in income. Under an absolute standard of poverty the poverty line is constant (in deflated dollars). That is, the percentage change in the poverty line associated with the percentage in income, a definition of the income elasticity of the poverty line, would be zero under absolute poverty. Under a relative standard of poverty, the poverty line changes in the same proportion as average income if the relative income distribution is constant. That is, to find a value of the income elasticity of the poverty line equal to one would be consistent with relative poverty. Kilpatrick's results were that the income elasticity of the poverty line is about 0.6 rather than zero or one. This conclusion is consistent with studies of budget study changes and income changes done by Ornati, Smolensky, and others. The main point is that poverty lines, measured either by people's opinion regarding money needed to get along or by expert opinion regarding the necessary composition of a bundle of goods is determined by a combination of concerns over both absolute and relative conditions. 47/

Conclusion of Conceptual Section

In this paper we have reviewed several issues in defining poverty. First, we found the income data to be deficient for constructing a conceptually sound estimate of income for purposes of identifying a potential consumption threshold. Much theoretical work and additional data is needed to improve measured income. Among immediately feasible changes, the most critical comments directed at the current official poverty standard were in the sections dealing with equivalency scales and the short-run procedures used to change the standard over time. Underlying some of the criticism of the current poverty standard, one of a group of "relatively absolute" market basket poverty standards, was the implicit suggestion that another poverty standard be considered. A major alternative is a measure of relative poverty which stresses relative deprivation criteria.

Ideally, a poverty standard should include minimal provision of basic needs plus inequality considerations. However, no single ideal measure of poverty was found. One relative poverty measure, a percentage of median income, was found by the author to have certain advantages over other relative poverty standards for some applications. It has been mentioned by others as a feasible alternative to the current official measure of poverty. Several Federal programs already make use of this relative measure. For these reasons, empirical work will focus on comparing the current standard with a poverty standard based on 50 percent of median family income.

EMPIRICAL SECTION

The first section presented two main poverty definitions, official poverty lines and one-half median family income, and discussed several conceptual issues in measuring poverty under each. In this present section we examine empirical comparisons between the two poverty concepts. It is not practical here to make empirical observations about different income concepts because of a paucity of the necessary data. Data used are from the Current Population Survey and the 1970 Census of the Population, which implies that there is little discretion in defining income. Tables are presented for counts of persons, families, families with school-aged children, and poor school-aged children. The relative likelihood of a particular unit being poor, or the incidence of poverty, is also shown. In the first section, equivalency scale problems were given special attention, but in this section, because we are mainly interested in comparing two poverty definitions, we retain the same equivalency scales as used in the current official poverty standard. That is, we compare two measures of poverty. The first is poor counts using the full official matrix of poverty lines according to the food plan equivalency scales shown in Table 1. The second, relative poverty, is one-half of median income for a family of four with equivalency scale adjustments for different family types using the same full matrix of 124 different scales. Use of the same scale adjustments for the two poverty standards is a unique feature of this empirical section. Another aspect is the comparison within the relative poverty measure of national median income versus state median income, important because of the increasing use of state median income as a standard on which to disburse Federal funds.

In this empirical section, the first part examines socio-demographic characteristics of the poor. In the next three parts, we concentrate on the geographical distribution of the poor. The latter two, using 1970 Census data, present the most detailed and policy-relevant empirical analysis. State-specific poverty counts are given and the implications for the distribution of anti-poverty Federal funds are discussed. Particular emphasis is given to Title I Elementary and Secondary Education fund distributions according to absolute versus relative poverty.

Characteristics of the Poor 48/

The Current Official Poverty Standard

The Number of Poor and Incidence of Poverty in 1973

Table 3 and 4 show, respectively, the number of poor families by characteristic and the relative likelihood of being poor, assuming a family had a particular characteristic. According to the current official poverty standard in 1973 there were 4.8 million

Table 3. Total Number of Poor Families by the Current Poverty Definition and a Relative Poverty Definiton by Year and Selected Characteristics (in thousands)

	Current	1968		1970		1971		1972		1973	
	Definition	(#1)	Median (#2)	#1	#2	#1	#2	#1	#2	#1	#2
Poverty Threshold in Dollars											
Total Number Families	51804			53174		54549		54374		55053	
Total Number Poor Families	5043		7874	5214	8220	5305	8639	5075	8013	4828	8064
Characteristics of Poor Families											
Ethnic Origin											
White	3615		5857	3702	6066	3753	6376	3441	5810	3218	5805
Non-white	1428		2015	1925	2786	2022	2977	2109	2946	2079	3017
Sex of Family Head											
Male-headed	3289		5350	3282	5499	3205	5589	2917	5178	2635	5110
Female-headed	1753		2524	1932	2721	2099	3049	2157	2834	2192	2953
Presence of Children											
No children less than 18 years	1769		2770	1823	2874	1706	2903	1455	2556	1308	2617
Children less than 18 years	3274		5103	3391	5346	3599	5735	3619	5456	3519	5446
Children 5-17 years	2791		4178	2773	4249	2888	4490	2938	4416	2825	4356
Work Experience of Family Head											
Full-time for full year	1353		2541	1070	2223	1085	2330	1005	2033	879	1929
Full-time for part year	902		1389	1030	1634	998	1646	1047	1633	999	1564
Part-time	621		867	765	1070	726	1090	662	956	602	959
Did not work	2108		2944	2292	3166	2423	3432	2330	3311	2330	3532
Number of Earners in Family											
No earners	1667		2732	1840	2983	1909	3164	1869	2575	1840	2734
1 earner	2093		3099	2274	3307	2211	3484	2168	3497	2023	3414
2 + earners	1280		2043	1099	1929	1183	1988	1036	1939	963	1915
Age of Family Head											
Aged, 65 +	1200		1895	1167	1843	1061	1875	879	1643	828	1740
Non-aged	3843		5979	4047	6377	4244	6764	4196	6370	4000	6324

SOURCE: Special tabulations by the Census Bureau from the March Current Population Surveys of 1969, 1971, 1973, and 1974.

Table 4. Incidence of Poor Families by the Current Poverty Definition and a Relative Poverty Definition by Year and Selected Characteristics

	1968 Current Definition (#1)	Median (#2)	1970		1971		1972		1973	
			#1	#2	#1	#2	#1	#2	#1	#2
Poverty Threshold in Dollars										
Total Number Poor Families	9.73	15.20	9.81	15.46	9.73	15.84	9.33	14.74	8.77	14.65
Characteristics of Poor Families										
Ethnic Origin										
White	7.78	12.61	7.80	12.78	7.72	13.12	7.10	11.98	6.58	11.87
Non-white	26.66	37.62	24.93	36.08	25.00	36.81	25.65	35.83	24.25	35.19
Sex of Family Head										
Male-headed	7.17	11.67	7.02	11.76	6.70	11.69	6.11	10.84	5.46	10.59
Female-headed	29.49	42.46	30.13	42.41	31.20	45.32	32.66	42.91	32.23	43.41
Presence of Children										
No children less than 18 years	8.01	12.54	7.97	12.56	7.26	12.35	6.18	10.85	5.43	10.87
Children less than 18 years	11.02	17.17	11.20	17.65	11.60	18.48	11.75	17.71	11.36	17.58
Children 5-17 years	11.56	17.30	11.44	17.53	11.68	18.16	11.98	18.01	11.41	17.60
Work Experience of Family Head										
Full-time for full year	3.96	7.44	3.21	6.68	3.21	6.89	2.93	5.92	2.52	5.53
Full-time for part year	13.06	20.12	13.01	20.65	12.43	20.50	13.62	21.23	13.86	21.68
Part-time	22.98	32.05	24.45	34.19	22.60	33.90	22.35	32.25	19.67	31.30
Did not work	29.56	41.29	29.38	40.58	28.68	40.63	27.31	38.82	25.95	39.35
Number of Earners in Family										
No earners	31.35	51.37	31.11	50.41	30.06	49.81	34.72	47.85	31.84	47.30
1 earner	10.82	16.01	11.81	17.18	11.00	17.34	10.69	17.24	10.32	17.42
2 + earners	4.72	7.52	3.92	6.88	4.21	7.07	3.60	6.75	3.24	6.45
Age of Family Head										
Aged 65 +	16.70	26.39	16.07	25.37	14.02	24.77	11.58	21.65	10.51	22.08
Non-aged	8.61	13.39	8.81	13.89	9.03	14.39	8.96	13.61	8.48	13.40

SOURCE: Processed from special tabulations by the Census Bureau for selected years March Current Population Survey.

poor families out of a total of eleven, or 8.8 percent of all families.

Table 3 shows that there were more poor white families than non-white families, but, within the respective categories, white and non-white families, the incidence of poverty is four times greater for non-white families than for white families. A similar situation occurs for female-headed households: there are absolutely more poor male-headed families, but the incidence of poverty among female-headed families is nearly one in three families. Families with heads over 65 years of age and families with no earners in the family also had relatively small absolute counts and relatively large poverty incidence.

Change in Poor Counts and Incidence Over Time

Although only a few recent years of data are shown in Tables 3 and 4 in this section, several important changes can be noted which are indicative of longer trends reported elsewhere. 49/ For example, between 1968 and 1973 there was an overall downward trend in the number of poor families and the incidence of poverty in families. Declines were sharp in the number and incidence of poverty in families with a head over 65 years of age. Noteworthy exceptions include a reversal in 1970 in the number of poor families, perhaps because of the 1969-1970 recession, and a steadily rising count of non-white and female-headed poor families. A note of caution should be added. For ease of exposition, poverty data is presented by separate characteristics. Black families headed by females may have a high incidence of poverty, but we cannot unambiguously make such a determination from these tables: We can only discuss the separate attributes.

A Relative Poverty Standard Based on Median Income

The Number of Poor and the Incidence of Poverty in 1973

In 1973, the current official poverty income cutoff for a nonfarm family of four was $4,540; median income for a U.S. family of four was $13,710. Hence, the median income concept of poverty may shift the poverty income threshold above the current poverty line, if one selected for a percentage of median income in 1973 above 33 percent. For differential characteristics of families who were poor in the two alternative poverty definitions, it would be more appropriate to select each year a percentage of median income that did not raise the median income poverty line above the official poverty line.

There are three reasons a fixed percentage of median income is preferable: Any percentage is in some sense arbitrary; administrative use is more likely to be with a fixed percentage; and Fuch's original suggestion referred to one-half median income. For these reasons, we use a fixed percentage, one-half median income, as a poverty threshold.

Perhaps the most striking comparison between the two definitions is that there are about 60 percent more poor families using the median income poverty standard than the current poverty standard. Specifically, in 1973, in 55 million families, 4.8 million were poor using the current official thresholds, while 8 million were poor using the median family income standard. In other characteristics, the two poverty standards were similar, but not exactly the same. That is, the absolute number of poor white families exceeded the number of non-white poor families, even though the relative incidence of poverty among non-white families exceeded that of white families. A similar pattern occurred in female-headed and aged-headed families, while a slight difference existed between the two definitions of poverty in the incidence of poverty for the characteristics of race, sex, and age of head. The difference is one of degree rather than of direction. For example, within the current definition the relative likelihood of a white family being poor is 6.6 percent, which is about one-fourth the relative likelihood of being poor if the family is non-white. In the median income standard, the disparity between the relative likelihood of poverty, white versus non-white, is 12 percent versus 35 percent. How much of these differentials between the two standards are simply due to differentials in income cutoffs is not determined here. The point is that differences due to relative incidence may arise when changing poverty definitions.

Changes in Poor Counts and Incidence Over Time for Both Relative and Absolute Poverty Standards

In contrast to the steady decline in the number of poor families under the current poverty standard, there were even more poor families in 1973 than 1968 under a relative poverty standard. The incidence of poverty under both standards (Table 4) shows a decline in poor families, but the decline in incidence with the current standard exceeds that of the relative standard. Note, however, that the downward trend over time in the number and incidence of poverty with the current standard is interrupted during the 1970 downturn in economic activity. The important point is that the number of poor using the median income standard also went up during 1970, contrary to the naive expectation expressed earlier that the number would decline in hard times since the median is expected to fall. During recessions, median income declines, but the main victims are those with low permanent incomes. The income distribution becomes more unequal and relative poverty rises. (I am grateful to Robert Plotnick for this point.)

The explanation for 1970 is compound. First, median income did not fall in 1970. Adverse labor market conditions may have affected the earnings portion of the income of working poor persons just above the 50 percent median income line in such a way that the number of families below the line increased without lowering the median income level itself. Further, the incidence of poverty under the median income standard rose even more from 1968 to 1970 than did the official standard. Thus, it is not appropriate to criticize the median income poverty standard for possibly predicting a decline in poverty in a short and mild recession.

There is little difference in associated family characteristics between the trends of poverty under the two definitions, aside from the level in the absolute number of poor and in the incidence of poverty. For example, most poor families had someone in the family with some earnings. However, in families with no earners, the incidence of poverty was very high. With a poverty threshold set at 50 percent of median family income, roughly one out of two families with no earners were poor. For the current thresholds, the poverty incidence averaged over 30 percent of all families with no earners. These differentials are consistent with the overall, or total family differentials were roughly 40 percent lower than the median income incidence.

Between 1968 and 1973, the overall differential in the incidence of poverty between the two poverty definitions had grown from 64 percent in 1969 to 59 percent in 1973. The overall differentials were greater than average for certain subgroups such as families with older family heads and families with heads who work full time. The point is that poverty policy targeted to one subgroup or the other will have to change if poverty definitions are changed, since the relative composition of the poor varies over time according to different poverty definitions.

Geographic Distribution of the Poor with Annual CPS Data

In addition to sociodemographic characteristics, the geographic location of the poor is another important factor to consider in understanding poverty in the allocative implications of Federal poverty programs. In the following part of the paper we consider the number of poor and the incidence of poverty among persons, families, and families with children by U.S. Census Division and poverty definition. In addition, we compare several years of data in order to understand the geographic mobility of the poor.

Current Poverty Standard

Geographic Distribution of Poor Persons, Families, and Families with Children in 1973

Tables 5, 6, and 7 present, respectively, counts of the number of poor persons, families, and families with children by poverty definition and nine census divisions. Also included are the total populations, the counts of poor and non-poor within each division, the rank from 1 to 9 of each division according to the number of poor, and the percentage of the nation's poor found within each division.

Table 5. Poor Persons by Poverty Definition, Year, and Census Division (in thousands) 1973

Year	Area	Total Population	Rank	Percentage of Total Population	Poor Population by Current Definition	Rank	Poverty Incidence[a] Rank	Poor Population Rank by 50 Percent Median Family Income		Pov Inc Ran
1967										
	U.S. Total	19585.0			2638.0			3634.3		
	Division									
	New England	947.0	8	4.84	63.8	9	2.41	1034	9	2
	Mid Atlantic	3645.7	2	18.62	370.8	3	14.06	5141	3	14
	East North Central	3975.1	1	20.30	386.7	2	14.66	5432	2	14
	West North Central	1315.7	6	6.72	173.9	7	6.89	2582	7	7
	South Atlantic	2962.9	4	15.13	551.0	1	20.89	7410	1	20
	East South Central	1219.3	7	6.23	323.2	5	12.25	4346	6	11
	West South Central	1707.6	5	8.72	355.4	4	13.47	4768	4	13
	Mountain	656.7	9	3.35	92.7	8	3.51	1251	8	3
	Pacific	3154.7	3	16.11	320.4	6	12.15	4379	5	12
1970										
	U.S. Total	20247.5			2506.6			3756.7		
	Division									
	New England	968.2	8	4.78	72.9	9	2.91	1092	9	2
	Mid Atlantic	3664.0	2	18.09	324.4	5	12.94	5150	4	13
	East North Central	4189.2	1	20.69	392.3	2	15.69	5919	2	15
	West North Central	1276.9	6	6.31	148.6	7	5.93	2338	7	6
	South Atlantic	3090.4	4	15.26	464.0	1	18.51	6768	1	18
	East South Central	1277.8	7	6.31	148.6	7	5.93	2338	7	6
	West South Central	1819.6	5	8.99	349.7	4	13.95	5080	5	13
	Mountain	661.1	9	3.27	93.5	8	3.73	1323	8	3
	Pacific	3299.8	3	16.30	359.0	3	14.32	5720	3	15
1973										
	U.S. Total	20762.1			2297.3			3646.3		
	Division									
	New England	1247.8	7	6.01	105.2	8	4.58	177.3	8	4
	Mid Atlantic	3635.1	2	17.51	315.5	4	13.73	530.5	3	14
	East North Central	4042.3	1	19.47	331.1	3	14.41	516.1	4	14
	West North Central	1601.4	6	7.71	155.3	7	6.76	259.5	7	7
	South Atlantic	3159.3	3	15.22	412.4	1	17.95	617.3	1	16
	East South Central	1336.3	8	6.44	228.3	6	9.94	365.7	6	10
	West South Central	2065.8	5	9.95	365.3	2	15.90	555.9	2	15
	Mountain	931.3	9	4.49	103.4	9	4.50	176.7	9	4
	Pacific	2742.8	4	13.21	280.7	5	12.22	447.2	5	12

SOURCE: Processed from special tabulations by the Census Bureau for selected years March Current Population Survey.

[a] Poverty Incidence is defined as the percentage of the total population who are poor.

Table 6. Numbers of Poor Families and Poverty Incidence by Two Poverty Definitions by Geographic Division over Time (in thousands)

	1967						1970						1973					
	Total Families	Rank	Percent of Total	Poor Families	Rank	Poverty Incidence a/	Total Families	Rank	Poverty Incidence	Poor Families	Rank	Poverty Incidence	Total Families	Rank	Poverty Incidence	Poor Families	Rank	Poverty Incidence
A. Census-Orshansky Poverty Counts																		
U.S. Total	49834			5348			53174			5215			55053			4828		
Division																		
New England	2420	8	(4.86)	134	9	(2.51)	2496	8	(4.69)	148	9	(2.84)	3232	6	(5.87)	219	8	(4.54)
Mid Atlantic	9394	2	(18.85)	752	2	(18.05)	9597	2	(18.05)	662	6	(12.69)	9542	2	(17.33)	657	4	(13.61)
East North Central	10056	1	(20.17)	749	3	(14.00)	10836	1	(20.38)	787	2	(15.09)	10614	1	(19.27)	698	3	(14.46)
West North Central	3399	7	(6.82)	382	7	(7.14)	3384	7	(6.36)	300	7	(5.75)	4251	7	(7.72)	307	7	(6.36)
South Atlantic	7569	3	(15.19)	1118	1	(20.91)	8204	4	(15.43)	968	1	(18.56)	8500	3	(15.43)	859	1	(17.79)
East South Central	3093	6	(6.21)	683	5	(12.77)	3447	6	(6.48)	675	5	(12.94)	3681	8	(6.68)	505	6	(10.46)
West South Central	4309	5	(8.64)	701	4	(13.11)	4852	5	(9.12)	732	4	(14.04)	5462	5	(9.92)	777	2	(16.09)
Mountain	1564	9	(3.14)	168	8	(3.14)	1638	9	(3.08)	182	8	(3.49)	2425	9	(4.40)	209	9	(4.33)
Pacific	8030	4	(15.11)	657	6	(12.28)	8717	3	(16.39)	760	3	(14.57)	7345	4	(13.34)	593	5	(12.28)
B. Poverty Counts Using 50 Percent of Median Family Income																		
U.S. Total				7581						8221						7875		
Division																		
New England				226	8	(3.0)				238	9	(2.90)				388	8	(4.92)
Mid Atlantic				1073	3	(14.2)				1122	5	(13.65)				1152	3	(14.62)
East North Central				1112	2	(14.6)				1242	3	(15.11)				1080	4	(13.71)
West North Central				566	7	(7.5)				508	7	(6.18)				547	7	(6.94)
South Atlantic				1554	1	(20.5)				1504	1	(18.29)				1348	1	(17.11)
East South Central				932	5	(12.3)				967	6	(11.76)				826	6	(10.48)
West South Central				98[illegible]	4	(13.0)				1127	4	(13.71)				1233	2	(15.65)
Mountain				23[illegible]	9	(3.0)				269	8	(3.27)				357	9	(4.53)
Pacific				904	6	(11.9)				1244	2	(15.13)				940	5	(11.93)

SOURCE: Processed from special tabulations by the Census Bureau for selected years March Current Population Survey.

[a] Poverty Incidence is defined as the percentage of the total population who are poor.

Table 7. Number of Poor Families and the Incidence of Poverty in Families with Related Children Ages 6-17 Years, by Poverty Definition, Geographic Division, and Year (in thousands)

	1967						1970						1973					
	Total Families	Rank	Percent of Total	Poor Families	Rank	Poverty Incidence a/	Total Families	Rank	Poverty Incidence	Poor Families	Rank	Poverty Incidence	Total Families	Rank	Poverty Incidence	Poor Families	Rank	Poverty Incidence
A. Census-Orshansky Poverty Counts																		
U.S. Total	23783			2870		(12.07)	24239			2774		(11.44)	24757			2825		(11.41)
Division																		
New England	1084	8	(4.56)	52	9	(1.81)	1122	8	(4.63)	79	9	(2.84)	1500	7	(6.1)	141	8	(5.0)
Mid Atlantic	4241	2	(17.83)	372	5	(12.96)	4247	2	(17.52)	340	5	(12.26)	4168	2	(16.8)	372	4	(13.2)
East North Central	4737	1	(19.92)	384	4	(13.38)	5040	1	(20.79)	410	2	(14.78)	4831	1	(19.5)	420	3	(14.9)
West North Central	1557	6	(6.55)	169	7	(5.59)	1516	7	(6.25)	155	7	(5.59)	1854	6	(7.5)	164	7	(5.0)
South Atlantic	3642	4	(15.31)	638	1	(22.22)	3887	3	(16.04)	555	1	(20.00)	3835	3	(15.5)	539	1	(19.1)
East South Central	1556	7	(6.54)	390	3	(13.59)	1557	6	(6.42)	336	6	(12.11)	1630	8	(6.6)	281	6	(9.9)
West South Central	2136	5	(8.98)	399	2	(13.90)	2191	5	(9.04)	396	3	(14.28)	2510	5	(10.1)	421	2	(14.9)
Mountain	850	9	(3.57)	104	8	(3.62)	843	9	(3.48)	122	8	(4.40)	1219	9	(4.9)	135	9	(4.8)
Pacific	3980	3	(16.73)	362	6	(12.61)	3838	4	(15.83)	380	4	(13.70)	3210	4	(13.0)	348	5	(12.3)
B. 50 Percent of Median Family Income Definition																		
U.S. Total				4015		(16.80)				4250		(17.5)				4310		(17.40)
Division																		
New England				94	9	(2.34)				119	9	(2.80)				220	8	(5.10)
Mid Atlantic				536	4	(13.35)				569	5	(13.39)				608	4	(14.10)
East North Central				553	2	(13.77)				645	2	(15.18)				621	2	(14.40)
West North Central				259	7	(6.45)				258	7	(6.07)				271	7	(6.28)
South Atlantic				877	1	(21.84)				831	1	(19.55)				775	1	(17.98)
East South Central				510	5	(12.70)				481	6	(11.32)				442	6	(10.25)
West South Central				549	3	(13.67)				574	4	(13.51)				626	3	(14.52)
Mountain				139	8	(3.46)				163	8	(3.84)				219	9	(5.08)
Pacific				498	6	(12.40)				609	3	(14.33)				523	5	(12.13)

SOURCE: Processed from special tabulations by the Census Bureau for selected years March Current Population Survey.

[a] Poverty Incidence is defined as the percentage of the total population who are poor.

Several observations regarding the geographic distribution of poverty can be made from these tables. First, the most populated areas relatively did not have the most poor. The East North Central and Mid Atlantic States in 1973 accounted for over 36 percent of total persons and families, but accounted for only 28 percent of the nation's poor persons and poor families. In contrast, East South Central States ranked 8th in population counts and 6th in poor counts. In general, persons and families who lived in the South, an area comprised of East South Central, West South Central and South Atlantic States, had a poverty rate, the ratio of total poor to total persons (or families), that exceeded the poverty rate of any other area of the country. Secondly, notice the difference in the number of 1973 poor families and 1973 poor families with school-aged children. The rankings between census divisions don't change, but the absolute number of poor families with children is 2.8 million versus 4.8 million poor families. A similar pattern emerges when comparing the relative geographic distribution of the 2.8 million with the 4.8 million poor families.

Geographic Changes in Poor Persons, Families, and Families with Children from 1967 to 1973

Actual geographic mobility cannot be examined because we lack panel data. That is, we cannot separate within division mobility in and out of the poverty group from between division geographic mobility of poor persons. Tables 5, 6, and 7 do show net flows of all persons by comparing changes in population counts to poor count changes in different regions.

For example, between 1967 and 1973 the total number of persons living in New England states grew by 25 percent, yet the increase in the total number of poor persons in New England in this period was roughly 40 percent. Furthermore, if one compares the percent of the nation's poor persons living in each census division in 1967 and 1973, it might appear that many poor persons moved from South Atlantic and East South Central division to New England and West South Central divisions, yet it is just as plausible that relatively more New England and West South Central families became poor between 1967 and 1973 than did other families; we cannot separate these effects.

Poor families, as a percentage of the nation's total poor families, declined over time in East North Central, West North Central, South Atlantic, and East South Central divisions. New England, West South Central, and Mountain divisions all experienced relative increases in the percentage of poor in their divisions. That is, the population of families with children in New England between 1967 and 1973 is from 1.1 to 1.5 million families. This increase rate, however, is less than the nearly three-fold expansion in the number of New England poor families with children.

A similar analysis can be made for other divisions. If only New England's poor count grew relative to its population in the six-year period, we could point to the relatively high welfare payments such as Aid to Families with Dependent Children (AFDC) available to citizens of New England States as possibly a major factor in this change. However, the West South Central States, whose number of poor also grew in this period, are at the bottom of the ranking of AFDC payments by states. This at least casts doubt on the hypothesis that relatively attractive welfare benefits explain much of the geographic movement of poor individuals. 50/

Relative Poverty Standard

Geographic Distribution of Poor Persons, Families, and Families with Children in 1973

Tables 5, 6, and 7 also present division-specific poverty counts, rankings, and incidence using poverty thresholds based on one-half median income for a U.S. family. When we examined families in the characteristics-of-poor-families section, the use of a median income poverty standard instead of the current method increased the number of poor appreciably. Similarly, we find here an increase of nearly 40 percent in 1973. However, in terms of the percentage of the nation's poor in each division, ordinal comparisons of the location of the poor, the choice of the two standards for a given year makes little, if any, difference. For example, in 1973, by both standards, roughly 10 percent of the nation's poor were located in the East South Central division. Similar comparisons between the two measures can be found for other divisions and other years.

The only consistent difference is that using the Census-Orshansky definition, the number of poor persons and families in East North Central States exceeds the poor count for Mid Atlantic States; whereas, using one-half median income, more poor are found in Mid Atlantic States than in East North Central States. At this point, this difference may not appear very important. But as we shall see below, such differences in poverty counts attributable to poverty definitions have implications for the distribution of some types of Federal funds. Using the median income poverty standard instead of the current poverty measure, a large and growing differential was found in poor persons' counts and poor families' counts. For example, in 1967 there were only 70 percent as many poor families using the current standard instead of the median income definition, and by 1973 this differential had grown to 61 percent. The reason for this particular change is that the number of poor families under the current definition has fallen while the number of poor families under the alternative definition has increased.

Ordinal comparisons between definitions of the location of poor families, or the percentage of the nation's poor families in each division are very similar. Some minor differences, such as noting that Mid Atlantic States had uniformly more poor under the median income poverty standard, can be observed. But, in general, for any given year, the main effect of using a median income poverty standard is to increase the number of poor families in any one division, not to vary the percentage of the nation's poor in that division.

Geographic Changes in Poor Persons, Families, and Families with Children from 1967 to 1973

As we compare division-specific poverty counts over time certain patterns emerge. In general, declines in the proportion of the nation's poor families living in East North Central, West North Central, South Atlantic and East South Central divisions were found with both poverty definitions. New England, West South Central, and Mountain divisions all experienced relative increases in the percentage of poor families in their divisions. Again, these increases were consistent between poverty standards. However, within these gross changes in the location of poor families, differences can be found between changes in the two poverty standards. For example, using the percentage of the nation's poor families in New England in 1967 as a base figure, we see that there was a 64 percent increase in New England's percentage of poor families by 1973 using a median income poverty measure versus an 80 percent increase if the current poverty standard is used. That is, if one compares the two definitions in divisions in which increases had occurred, there is a tendency for the increases to be greater if one uses the current standard.

For poor persons, changes over time in poverty counts noted for the current standard are not changed under a median income poverty standard.

Among families with children of school age, the extent of poverty depends on the choice of a poverty standard. In 1967, if one uses the current poverty measure, 12 percent of all such families are poor. A comparable rate if one uses the median income poverty standard shows a 17 percent poverty rate for families. These differentials in poverty changed slightly over the period 1967 to 1973. In 1967, the number of poor families with children aged 5 to 17 years under the current poverty definition was 71 percent of the number of such families using 50 percent of median income for a family as a standard. In 1970 and 1973 the relative ratios were 65 percent. However, in contrast to a similar comparison made between the two definitions using all families, the increasing differential in this case is due solely to the increase in the number of families who are poor under a median income standard.

We conclude this part of the paper by noting that the main effect of changing from the current poverty standard to a median income based poverty standard is to raise the level of the income cutoff, but not to cause the geographic location of the poor between 1967 and 1973 to vary substantially. Only isolated instances were found in which choice of poverty definition made a difference in the relative ordering of the percentage of the nation's poor located in each census division. For example, the Mid Atlantic and East North Central States had rank orderings of poor persons and poor families reversed in 1973 by changing the poverty definition. Such instances, however, were the exception. The implication is that the differential trend in total poverty counts between the two poverty definitions cannot be pinpointed to differential trends in poverty counts by census division.

Geographic Distribution of Poor Persons and Poor Families with 1970 Census Data

In this portion of the paper we use cross-sectional survey data from the 1 in 100 sample of the 1970 Census of the Population to examine state-specific counts of poor persons and poor families. At the outset, we should acknowledge the limitations of using cross-sectional data. For example, one may raise the question as to whether or not it is appropriate to use data collected in 1969 to make inferences regardng current, 1977, geographic poverty distributions. As we noted in previous sections where we used CPS data, poor population shifts in location occurred between 1967 and 1973. The implication is that corresponding shifts may have occurred between 1969 and 1977. Against this limitation one has to consider the advantage arising from greater disaggregation in the data. Namely, we can now compare the number and incidence of poverty among the several states, not just nine census divisions.

Furthermore, this disaggregation permits more policy-relevant analysis since some Federal funds are allocated to states based on poverty counts and such counts might be affected by variation in a poverty definition. Because these advantages in using the 1970 Census data appear to outweigh the limitations, we present an analysis using this data set. The qualification regarding the currency of the data, however, should be kept in mind.

As with previous empirical portions, we stress tabular comparisons between the present official poverty definition and a relative poverty definition based on one-half median income. In this portion we further refine the analysis. Median family income may be measured on a national or state basis. The latter may be a more appropriate measure according to the view that relative deprivation calls for comparisons between one's income and local, not national, norms. Secondly, as we shall point out, some Federal programs refer to median income in a geographic area rather than national median income. The empirical analysis, therefore, presents counts of poor persons and families based on a national and state median income.

A second refinement concerns equivalency scale adjustments. The current poverty standard adjusts equal-well-being thresholds for several factors, including a farm/nonfarm differential: farm families are assumed to need only 85 percent of nonfarm family cash income. Because we do not have state median income poverty counts with this adjustment, and we wish to isolate the poverty count differences attributable to definitional causes, we present poverty counts for the current official standard without the farm differential thresholds. For a comparison, we also include current poverty standard counts by state with the farm/nonfarm differential. The analysis in the remainder of this paper is, thus, centered on state-by-state poverty comparisons using four criteria: the current poverty standard; the current standard without the farm/nonfarm differential; relative poverty using one-half of the median family income for the nation without the farm differential in equivalency scales; and relative income based on one-half median family income within each state without the farm differential.

Current Poverty Standard

Persons and Families in Poverty by State

Table 8, column (2), shows the number of poor persons under the current official standard in each state, and the percentage of the nation's poor under that standard who live in each state. In absolute terms, more heavily populated states, such as New York and California, have more poor persons than sparsely populated states. Poor family counts shown in Table 8, column (1), also are highest in the more populated states. In relative terms, when one compares the percentage of poor persons in a state to the percentage of the nation's population in a state, a different pattern emerges. New York and California have relatively fewer poor than do many states. In fact, in relative terms, the poverty rate is highest in East South Central States followed by West South Central and South Atlantic States. Another method of expressing a related point is to note that 35 percent of the people of Mississippi are poor versus 8 percent in New Jersey. These figures are computed as row percentages as opposed to the column percentages presented in the tables. The point is that incidence of poverty for Southern persons and families is relatively high.

If we drop the farm threshold differential in the current poverty standard, the change in poor persons counts, column (3) versus column (2) in Table 8 [or column (2) versus column (1) in Table 9 for poor families] there is a slight increase in poverty counts in most states because poverty income thresholds rise. There are, however, virtually no differences in the relative percentage of the nation's poor in each state.

Table [illegible]. Persons in Poverty and Percentage of Nation's Poverty by State, Division, and Poverty Definition Using 1970 Census Data (figures in hundreds)

Census Division	(1) Population	(2) Number of Poor According to Current Definition	(3) Current Definition Nonfarm	(4) One-Half National Median Family Income	(5) One-Half State Median Family Income
U.S. Total	1978097	273972	277189	448304	436736
New England	114624	10426	10441	18038	18034
Maine	9570 (0.48)	1273 (0.46)	1277 (0.46)	2497 (0.56)	1630 (0.37)
New Hampshire	7145 (0.36)	713 (0.26)	720 (0.26)	1294 (0.29)	1222 (0.28)
Vermont	4310 (0.22)	530 (0.19)	533 (0.19)	957 (0.21)	957 (0.22)
Massachusetts	55065 (2.78)	4749 (1.73)	4750 (1.71)	8216 (1.83)	8454 (1.94)
Rhode Island	9019 (0.46)	1124 (0.41)	1124 (0.40)	1727 (0.38)	1727 (0.40)
Connecticut	29515 (1.49)	2037 (0.74)	2037 (0.73)	3347 (0.75)	4044 (0.93)
Mid Atlantic	363967	38550	38680	64704	66180
New York	178238 (9.01)	20373 (7.44)	20426 (7.37)	33279 (7.42)	35549 (8.14)
New Jersey	70415 (3.56)	5641 (2.06)	5654 (2.04)	9589 (2.14)	11331 (2.59)
Pennsylvania	115314 (5.82)	12536 (4.58)	12600 (4.54)	21836 (4.87)	19300 (4.42)
East North Central	393075	39107 (1.43)	39756	66742	72325
Ohio	104242 (5.27)	10657 (3.89)	10795 (3.89)	18221 (4.06)	18790 (4.30)
Indiana	50611 (2.56)	4802 (1.75)	4971 (1.79)	8844 (1.97)	8897 (2.04)
Illinois	108352 (5.48)	11241 (4.10)	11333 (4.09)	18463 (4.12)	21180 (4.84)
Michigan	86954 (4.40)	8187 (2.99)	8255 (2.98)	13496 (3.01)	15537 (3.56)
Wisconsin	42916 (2.17)	4220 (1.54)	4402 (1.59)	7718 (1.72)	7921 (1.81)
West North Central	158545	20264	21829	37292	38631
Minnesota	37111 (1.88)	3979 (1.45)	4182 (1.51)	7358 (1.64)	7846 (1.80)
Iowa	27468 (1.39)	3119 (1.14)	3260 (1.18)	5972 (1.33)	8899 (2.04)
Missouri	45580 (2.30)	6119 (2.52)	7061 (2.54)	11408 (2.54)	10895 (2.49)
North Dakota	5935 (0.30)	936 (0.34)	979 (0.35)	1746 (0.39)	1392 (0.32)
South Dakota	6429 (0.33)	1142 (0.42)	1215 (0.44)	2131 (0.47)	1612 (0.37)
Nebraska	14412 (0.73)	1991 (0.73)	2076 (0.75)	3559 (0.79)	3295 (0.75)
Kansas	21610 (1.09)	2978 (1.09)	3056 (1.10)	5118 (1.14)	4692 (1.07)
South Atlantic	296891	53008	53505	84063	76828
Delaware	5341 (0.27)	617 (0.23)	621 (0.22)	1074 (0.24)	1094 (0.25)
Maryland	38128 (1.93)	3823 (1.40)	3839 (1.38)	6349 (1.42)	7233 (1.66)
District of Columbia	7197 (0.36)	1277 (0.47)	1277 (0.46)	1908 (0.42)	2034 (0.47)
Virginia	44522 (2.25)	6878 (2.51)	6969 (2.51)	11525 (2.57)	10849 (2.48)
West Virginia	17088 (0.86)	3963 (1.45)	3981 (1.44)	6112 (1.36)	4641 (1.06)
North Carolina	48908 (2.47)	9753 (3.56)	9939 (3.59)	15682 (3.50)	13401 (3.07)
South Carolina	24809 (1.25)	6136 (2.24)	6227 (2.25)	9140 (2.04)	7890 (1.81)
Georgia	44645 (2.26)	9430 (3.44)	9510 (3.43)	14394 (3.21)	13554 (3.10)
Florida	66253 (3.35)	11131 (4.06)	11142 (4.02)	17879 (3.99)	16132 (3.69)
East South Central	125088	31938	32515	47942	40054
Kentucky	31339 (1.58)	7268 (2.65)	7473 (2.70)	11211 (2.50)	9520 (2.18)
Tennessee	38329 (1.94)	8367 (3.05)	8521 (3.07)	13011 (2.90)	10607 (2.43)
Alabama	33761 (1.71)	8670 (3.16)	8761 (3.16)	12944 (2.89)	11248 (2.58)
Mississippi	21659 (1.09)	7643 (2.79)	7760 (2.80)	10776 (2.40)	8679 (1.99)
West South Central	187821	39690	40104	62085	55965
Arkansas	18816 (0.95)	5173 (1.89)	5258 (1.90)	7908 (1.76)	6075 (1.39)
Louisiana	35465 (1.79)	9608 (3.51)	9674 (3.49)	13986 (3.12)	12063 (2.76)
Oklahoma	24686 (1.25)	4570 (1.66)	4671 (1.69)	7491 (1.67)	6612 (1.51)
Texas	108854 (5.50)	20339 (7.42)	20501 (7.40)	32700 (7.29)	31215 (7.15)
Mountain	80676	11475	10980	19527	18169
Montana	6747 (0.34)	920 (0.34)	931 (0.34)	1703 (0.38)	1626 (0.37)
Idaho	6961 (0.35)	876 (0.32)	905 (0.33)	1649 (0.37)	1273 (0.29)
Wyoming	3227 (0.16)	390 (0.14)	397 (0.14)	727 (0.16)	707 (0.16)
Colorado	21351 (1.08)	2688 (0.98)	2127 (0.77)	4638 (1.03)	4633 (1.06)
New Mexico	9932 (0.50)	2323 (0.85)	2333 (0.84)	3626 (0.81)	3234 (0.74)
Arizona	17281 (0.87)	2657 (0.97)	2658 (0.96)	4275 (0.95)	3990 (0.91)
Utah	10379 (0.52)	1207 (0.44)	1215 (0.44)	2149 (0.48)	1846 (0.42)
Nevada	4798 (0.24)	414 (0.15)	414 (0.15)	760 (0.17)	860 (0.20)
Pacific	257410	28652	28779	60298	54543
Washington	32990 (1.67)	3302 (1.21)	3342 (1.21)	5579 (1.24)	6033 (1.38)
Oregon	20398 (1.03)	2460 (0.90)	2490 (0.90)	4108 (0.92)	4154 (0.95)
California	193894 (10.00)	21812 (7.96)	21869 (7.90)	36369 (8.11)	42142 (9.65)
Alaska	2784 (0.14)	320 (0.12)	320 (0.12)	12944 (2.88)	685 (0.16)
Hawaii	7344 (0.37)	758 (0.28)	758 (0.27)	1298 (0.29)	1529 (0.36)

SOURCE: Special tabulations by Census for Kahn and Miller.

in Poverty and the Percentage of the Nation's Poor by State and Poverty Definition

	(1) Number of Poor Families (SSA) Current Definition	(2) Number of Poor Families Current Definition Nonfarm	(3) One-Half National Median Family Income	(4) One-Half State Median Family Income
U.S. Total	55309	56126	94535	91442
New England	2001	2006	3673	3598
Maine	257 (0.46)	259 (0.46)	537 (0.57)	336 (0.37)
New Hampshire	144 (0.26)	146 (0.26)	270 (0.29)	251 (0.28)
Vermont	93 (0.17)	94 (0.17)	188 (0.20)	154 (0.17)
Massachusetts	892 (1.61)	892 (1.59)	1644 (1.74)	1690 (1.85)
Rhode Island	223 (0.40)	223 (0.40)	363 (0.38)	341 (0.37)
Connecticut	392 (0.71)	392 (0.70)	671 (0.71)	826 (0.90)
Mid Atlantic	7515	7549	13320	13620
New York	3980 (7.20)	3993 (7.11)	6830 (7.22)	7333 (8.02)
New Jersey	1110 (2.01)	1112 (1.98)	1980 (2.09)	2357 (2.58)
Pennsylvania	2425 (4.38)	2444 (4.35)	4510 (4.77)	3930 (4.30)
East North Central	7638	7780	13679	14881
Ohio	2109 (3.81)	2146 (3.82)	3785 (4.00)	3907 (4.27)
Indiana	967 (1.75)	993 (1.77)	1862 (1.97)	1871 (2.05)
Illinois	2179 (3.94)	2201 (3.92)	3771 (3.99)	4364 (4.77)
Michigan	1612 (2.91)	1629 (2.90)	2752 (2.91)	3185 (3.48)
Wisconsin	771 (1.39)	811 (1.44)	1509 (1.60)	1554 (1.70)
West North Central	4294	4490	8026	7528
Minnesota	761 (1.38)	805 (1.43)	1499 (1.59)	1603 (1.75)
Iowa	617 (1.12)	655 (1.17)	1272 (1.35)	1132 (1.24)
Missouri	1444 (2.61)	1491 (2.66)	2539 (2.59)	2421 (2.65)
North Dakota	183 (0.33)	193 (0.34)	365 (0.39)	282 (0.31)
South Dakota	239 (0.43)	257 (0.46)	446 (0.47)	339 (0.37)
Nebraska	404 (0.73)	424 (0.76)	755 (0.80)	695 (0.76)
Kansas	646 (1.17)	665 (1.18)	1150 (1.22)	1056 (1.15)
South Atlantic	11007	11127	18166	16610
Delaware	125 (0.23)	126 (0.22)	217 (0.23)	221 (0.24)
Maryland	732 (1.32)	736 (1.31)	1270 (1.34)	1461 (1.60)
District of Columbia	219 (0.40)	219 (0.39)	343 (0.36)	371 (0.41)
Virginia	1432 (2.59)	1456 (2.59)	2480 (2.62)	2316 (2.53)
West Virginia	857 (1.55)	861 (1.53)	1380 (1.46)	1022 (1.12)
North Carolina	2044 (3.70)	2094 (3.73)	3459 (3.66)	2905 (3.18)
South Carolina	1252 (2.26)	1269 (2.26)	1903 (2.01)	1619 (1.77)
Georgia	1965 (3.55)	1981 (3.53)	3086 (3.26)	2892 (3.16)
Florida	2381 (4.30)	2385 (4.25)	4028 (4.26)	3803 (4.16)
East South Central	6840	6986	10597	8673
Kentucky	1620 (2.93)	1672 (2.98)	2557 (2.70)	2100 (2.30)
Tennessee	1858 (3.36)	1900 (3.39)	2978 (3.15)	2391 (2.61)
Alabama	1799 (3.25)	1824 (3.25)	2798 (2.96)	2400 (2.62)
Mississippi	1563 (2.83)	1590 (2.83)	2264 (2.39)	1782 (1.95)
West South Central	8180	8298	13402	11918
Arkansas	1124 (2.03)	1148 (2.05)	1811 (1.92)	1346 (1.47)
Louisiana	1944 (3.51)	1960 (3.49)	2912 (3.08)	2463 (2.69)
Oklahoma	1016 (1.84)	1048 (1.87)	1786 (1.89)	1564 (1.71)
Texas	4096 (7.41)	4142 (7.38)	6893 (7.29)	6545 (7.16)
Mountain	2238	2263	4021	3706
Montana	179 (0.32)	182 (0.32)	343 (0.36)	327 (0.36)
Idaho	179 (0.32)	187 (0.33)	368 (0.39)	273 (0.30)
Wyoming	83 (0.15)	84 (0.15)	155 (0.16)	151 (0.17)
Colorado	494 (0.89)	502 (0.89)	931 (0.98)	930 (1.02)
New Mexico	456 (0.82)	459 (0.82)	744 (0.79)	659 (0.72)
Arizona	516 (0.93)	516 (0.92)	884 (0.94)	811 (0.89)
Utah	247 (0.45)	249 (0.44)	433 (0.46)	370 (0.40)
Nevada	84 (0.15)	84 (0.15)	163 (0.17)	185 (0.20)
Pacific	5596	5627	9651	11103
Washington	654 (1.18)	662 (1.18)	1174 (1.24)	1279 (1.40)
Oregon	473 (0.86)	482 (0.86)	856 (0.91)	870 (0.95)
California	4265 (7.71)	4279 (7.62)	7278 (7.70)	8536 (9.33)
Alaska	53 (0.09)	53 (0.09)	92 (0.10)	122 (0.13)
Hawaii	151 (0.27)	151 (0.27)	251 (0.27)	296 (0.32)

SOURCE: Special tabulations by Census for Kahn and Miller.

Relative Poverty Standard

Persons and Families in Poverty by State

Relative poverty, defined as one-half the median family income for the nation, is used together with the urban, official equivalency scale to form a matrix of poverty thresholds used to determine the number of poor persons and poor families. By comparing corresponding entries in columns (3) and (4) of Table 8, we can judge the impact on poor persons counts of changing from the current poverty standard, $3,743 for a nonfarm four-person family in 1969, to a median income based poverty standard, $4,798 for families in the United States in 1969. 51/ A similar comparison can be made for families in columns (2) and (3) of Table 9. The immediate effect of changing to the relative poverty definition is to raise the number of poor persons from 27.7 million to 44.8 million, a 60 percent increase in the number and incidence of poverty.

The extent of this increase, however, is not uniform among different states. In states in which median income of families is above the national average, such as New York, $10,719, and Connecticut, $12,045, the increase in the incidence of poverty, the percentage of population who are poor, is above the overall increase, while in Mississippi, $6,068, and Kentucky, $7,439, relatively low-income states, the increased poverty incidence is less than the national average. In terms of what percentage of the nation's poor are located in which states, the change from the current poverty standard to a relative poverty standard increases the relative number of the nation's poor in richer states and lowers the relative number of poor in less rich states. This tendency is most clearly shown when comparing the column (2) and (3) percentages in Table 9 for Mid Atlantic States with corresponding entries for South Central States. See also Table 10 for persons and Table 11 for children.

Replacing national with state median income, column (5) versus column (4) in Table 8, increases the incidence of poverty over the official standard by less than the increase found when using a national median income standard. The overall difference in the amount of increase is roughly one-half of one percent, or just over one million less poor persons. As with the national median income standard, poverty increases in all states, but a very important difference emerges when comparing the amount of the increased poverty in low versus high income states. When one uses 50 percent of median family income in a state as a poverty threshold to determine the percentage of poor persons in that state, the percentage increase in the incidence of poverty in high-income states is less than the percentage increase in poverty incidence in low-income states.

Put another way, consider two states, Mississippi and New Jersey. In Mississippi there are more poor persons and families under a poverty threshold based on one-half national median income than there are poor

Table 10. Incidence of Poverty for Persons by State and by Alternative Poverty Definition: 1970 Census

Name of State	(1) Current Poverty Standard	(2) Current Standard for Nonfarm	(3) 50 Percent of Family Median Income for Nation	(4) 50 Percent of Family Median Income for State	(5) Median Income of all Families
United States	13.9	14.0	22.7	22.1	$ 9596
Alabama	25.7	26.0	38.3	33.3	7263
Alaska	11.5	11.5	19.0	24.6	12507
Arizona	15.4	15.4	24.7	23.1	9206
Arkansas	27.5	27.9	42.0	32.3	6271
California	11.2	11.3	18.8	21.7	10828
Colorado	12.6	12.8	21.7	21.7	9568
Connecticut	6.9	6.9	11.3	13.7	12045
Delaware	11.6	11.6	20.1	20.5	10255
District of Columbia	17.7	17.7	26.5	28.3	9606
Florida	16.8	16.8	27.0	24.3	8274
Georgia	21.1	21.3	32.2	30.4	8174
Hawaii	10.3	10.3	17.7	20.5	11664
Idaho	12.6	13.0	23.7	18.3	8405
Illinois	10.4	10.5	17.0	19.5	11096
Indiana	9.6	9.8	17.5	17.6	9967
Iowa	11.4	11.9	21.7	19.5	9055
Kansas	13.8	14.1	23.7	21.7	8725
Kentucky	23.2	23.8	35.8	29.7	7439
Louisiana	27.1	27.3	39.4	34.0	7527
Maine	13.3	13.3	26.1	17.0	8220
Maryland	10.0	10.1	16.7	19.0	11206
Massachusetts	8.6	8.6	14.9	15.4	10981
Michigan	9.4	9.5	15.5	17.9	11174
Minnesota	10.7	11.3	19.8	21.1	9928
Mississippi	35.3	35.8	49.8	40.1	6068
Missouri	15.2	15.5	25.0	23.9	8935
Montana	13.6	13.8	25.2	24.1	8547
Nebraska	13.8	14.4	24.7	22.9	8597
Nevada	8.6	8.6	15.8	17.9	10779
New Hampshire	10.0	10.1	18.1	17.1	9698
New Jersey	8.0	8.0	13.6	16.1	11589
New Mexico	23.4	23.5	36.5	32.6	7845
New York	11.4	11.5	18.7	19.9	10719
North Carolina	19.9	20.3	32.1	27.4	7770
North Dakota	15.8	16.5	29.4	23.5	7836
Ohio	10.2	10.4	17.5	18.0	10372
Oklahoma	18.5	18.9	30.3	26.8	7720
Oregon	12.1	12.2	20.1	20.4	9498
Pennsylvania	10.9	10.9	18.9	16.7	9568
Rhode Island	12.5	12.5	19.1	17.9	9734
South Carolina	24.7	25.1	36.8	31.8	7620
South Dakota	17.8	18.9	33.1	25.1	7490
Tennessee	21.8	22.2	33.9	27.7	7446
Texas	18.7	18.8	30.0	28.7	8514
Utah	11.6	11.7	20.7	17.8	9342
Vermont	12.3	12.4	22.2	18.7	8974
Virginia	15.4	15.7	25.9	24.4	9076
Washington	10.0	10.1	16.9	18.3	10481
West Virginia	23.2	23.3	35.8	27.2	7414
Wisconsin	[illegible].8	10.3	18.0	18.5	10080
Wyoming	12.1	12.3	22.5	21.9	9030

*Incidence is defined as the percentage of the population of the state who are poor.

SOURCE: Column (1) Special tabulations by Census.
Column (2) Special tabulations by Census.
Column (3) Special tabulations by Census for Kahn and Miller.
Column (4) Special tabulations by Census for Kahn and Miller.
Column (5) U.S. Department of Commerce, Social and Economic Statistics Administration, Bureau of the Census, *Detailed Characteristics*, U.S. Summary [PC(1)-D11], February 1973.

Table 11. Incidence of Poverty for Related Children, 5-17 Years, by States and Alternative Poverty Definition: 1970 Census

	(1) Current Poverty Standard	(2) Current Standard Using Nonfarm Equivalency Scale	(3) 50 Percent of Median Family Income for Nation	(4) 50 Percent of Median Family Income for State
United States	15.2	15.3	25.5	24.9
Alabama	30.5	30.8	44.2	38.6
Alaska	10.8	10.8	19.7	26.9
Arizona	17.6	17.6	23.5	26.8
Arkansas	32.2	32.7	48.0	37.1
California	12.5	12.5	20.6	24.2
Colorado	13.2	13.5	23.2	23.2
Connecticut	6.9	6.9	12.2	15.0
Delaware	12.8	12.8	23.3	24.1
District of Columbia	23.4	23.4	36.8	39.2
Florida	19.7	19.7	31.5	28.2
Georgia	25.2	25.4	38.4	36.3
Hawaii	10.9	10.9	20.7	24.2
Idaho	12.0	12.4	24.1	18.6
Illinois	10.9	10.9	19.0	22.2
Indiana	8.7	9.0	18.2	28.7
Iowa	10.1	10.6	21.9	19.3
Kansas	12.9	13.3	23.8	21.6
Kentucky	25.0	25.9	40.3	33.0
Louisiana	31.2	31.5	45.4	39.1
Maine	14.2	14.2	29.1	18.6
Maryland	11.1	11.1	19.1	22.3
Massachusetts	8.7	8.7	16.2	16.7
Michigan	9.0	9.1	16.0	19.0
Minnesota	9.3	10.0	19.7	21.2
Mississippi	40.9	41.5	58.0	46.8
Missouri	15.0	15.3	25.9	24.4
Montana	13.1	13.2	28.6	27.1
Nebraska	13.6	14.4	26.6	24.5
Nevada	8.9	8.9	17.6	10.1
New Hampshire	8.2	8.3	17.8	16.4
New Jersey	8.4	8.4	15.5	18.6
New Mexico	28.0	28.0	42.7	38.1
New York	13.0	13.0	22.0	23.6
North Carolina	23.4	23.9	37.5	32.2
North Dakota	17.1	17.9	31.9	26.0
Ohio	10.1	10.3	18.7	19.4
Oklahoma	19.1	19.4	31.5	27.5
Oregon	11.1	11.3	20.2	20.5
Pennsylvania	11.0	11.0	20.9	18.1
Rhode Island	12.3	12.3	20.2	18.8
South Carolina	30.2	30.8	43.9	38.8
South Dakota	17.1	18.1	35.8	25.2
Tennessee	24.9	25.4	39.4	31.9
Texas	21.7	21.8	34.8	33.3
Utah	10.1	10.2	20.3	16.8
Vermont	12.1	12.1	24.4	20.5
Virginia	18.3	18.6	30.8	29.2
Washington	8.8	9.0	16.1	17.7
West Virginia	25.1	25.3	39.9	29.6
Wisconsin	9.0	9.6	18.8	19.3
Wyoming	10.1	10.6	22.9	22.4

SOURCE:	Column (1)	Special tabulations by Census.
	Column (2)	Special tabulations by Census.
	Column (3)	Special tabulations by Census for Kahn and Miller.
	Column (4)	Special tabulations by Census for Kahn and Miller.
	Column (5)	U.S. Department of Commerce, Social and Economic Statistics Administration, Bureau of the Census, Detailed Characteristics, U.S. Summary [PC(1)-D1], February 1973.

persons and families under one-half the median income of Mississippi families. In fact, by the national income standard, one-half of all the people of Mississippi are poor and nearly 60 percent of the children of Mississippi are poor. The reverse is true for New Jersey, a state whose median income exceeds the national family median income. That is, a state-based median income poverty standard is associated with greater New Jersey poor than a national-based median income poverty standard. The importance of these issues will emerge in the next section when we discuss program implications and alternative schemes for the distribution of Federal funds.

Program Implications

Examples of Federal Programs Using Alternative Poverty Definitions

Since the development of the current official poverty thresholds, a number of Federal statutes have incorporated aspects of a poverty definition into the law's criteria for eligibility or disbursement of Federal funds. Title I of the Elementary and Secondary Education Act (ESEA) in part determines eligibility for Federal funds to aid educationally disadvantaged school children based on the current poverty definition.

Another example is the Comprehensive Employment and Training Act of 1973 (CETA), an umbrella act which incorporates two poverty definitions. First, eligibility for participation in various manpower programs is made according to whether a person is "economically disadvantaged" or not. A person is "economically disadvantaged" (see Title VI, Section 94.4), if he is a member of a family receiving cash welfare payments or if his annual income does not exceed the current poverty standard (our term, not theirs). A second poverty definition is used under CETA to distribute Federal funds. As stated in Title VI, Section 95.2, paragraph (iii): "Twelve and one-half percent of the funds subject to the allocation formula be allocated on the basis of a prime sponsor's proportion of the number of adults in low-income families in all prime sponsor areas." A family is considered "low-income" if its income if its income is below $7,000 in 1969 dollars. In short, Federal funds under CETA are distributed based on a strictly absolute poverty standard, whereas eligibility for those funds within an area is set according to a relatively absolute standard, the current official thresholds. ESEA and CETA are two examples of Federal programs using the current official poverty count; we can also point to Federal programs using median income poverty standards.

The main purpose of the Housing and Community Development Act of 1974 was to direct housing toward the low-income population. Under this act the current official poverty criteria may be used to determine the "extent of poverty" except for adjustments as appropriate and in the sole discretion of the Secretary, for regional or local variations in the income and cost of living. The "extent of poverty" is a key factor in allocating funds to different areas under Title I of the act. Criteria for eligibility for having assistance, listed in Title II, use three poverty definitions, two of which are based on median income in an area. Section 201(a) amending the United States Housing Act of 1973 says, "...The term 'very low-income families' means families whose income does not exceed 50 percentum of the median family income for the area, as determined by the Secretary with adjustments for smaller and larger families." An earlier part of Title II, Section 8(f) defines eligibility for housing assistance according to whether a family is a "lower-income family." This term means that the family's income does not exceed 80 percentum of the median income for the area, although the Secretary may make adjustments for family size and other factors deemed relevant.

Title XX of the Social Security Act is another example of the administrative use of a poverty line based on median income within a state. The overall purpose of this act "authorizes Federal sharing for the cost of state-sponsored social services other than basic health, education, and institutional services or income maintenance. 52/ Under this act, Federal support can be forthcoming for day care programs for children, meals on wheels to shut-ins, family planning, etc. No payment for these services need be made by families whose income is less than the lower of (1) 80 percent of the median income for a family of four in the state, or (2) the median income for a family of four in the fifty states and the District of Columbia with further adjustments made by the Secretary for family size. A fee schedule for the services is established for families whose incomes are between 80 percent and 115 percent of the median income within the state.

Listing the various poverty definitions in current use is more suggestive than definitive. It does underline, however, that a main aspect of this paper, comparing the current official poverty standard with a relative poverty standard, has more than hypothetical interest. Both definitions of poverty are in current use today to distribute Federal funds to areas or individuals. Is it desirable to allocate Federal funds based on two poverty counts? What are the consequences of one poverty standard versus another in terms of which states receive which share of Federal funds? By addressing the last question we may be able to answer part of the first question.

The Implication of Poverty Definitions on the Geographical Distribution of Federal Funds

We next examine below several alternative schemes of distributing funds to states. In general, we will not replicate exactly the existing distributional schemes, but rather look for patterns which emerge when using the current official poverty standard as opposed to a relative poverty standard. In this discussion, we shall refer to poverty counts of persons and families. Finally, in keeping with the particular interests of the Poverty Task Force, we will compare aspects of the relative distributional impacts of allocating funds to states under Title I, Elementary and Secondary Education Act Amendments, which depends, in part, on a Census-Orshansky poverty line, with the distributional impacts of using (a) only the current poverty line, or (b) a poverty line defined as 50 percent of the family median income for the nation, as (c) a poverty line based on 50 percent of the family median income for the state.

Allocation Implications from Persons in Poverty by State and Poverty Definition

Table 8 lists data on persons in the 50 states and divisions by population, current poverty standard, the current standard with no farm/nonfarm adjustment, a relative poverty standard based on one-half family income for all families in the country, and a comparable relative poverty standard using median income within a state. Data are from the 1970 Census. Within each of the five columns are two entries, the numeric total for the state or division and the fraction or percent of the total accounted for by the state. The numeric totals are included only for the proverbial interested reader. Our main interest lies with the percentage figures.

One might begin a discussion of alternative distributional methods by suggesting that one part in fifty be given to each state. Such a scheme can be quickly dismissed on the grounds that states with large populations would receive less money per person than sparsely populated states. From this objection, one might offer that a distribution based on relative number of individuals within a state is a logical next step. For example, since Maine has roughly 9.5 million persons, or 0.48 percent of the population for the nation, Maine should receive 0.48 percent of a total amount of allocated Federal dollars.

This per capita distribution scheme implies uniform needs between individuals. In particular, it considers the needs of a poor person to be identical to someone who isn't poor. Many would object because densely populated areas such as the Northeast, which have relatively few poor, would receive more than their "fair share" of Federal dollars. If one follows a criteria that Federal funds designated to poor persons should be allocated according to the location of those poor persons, then an alternative distribution scheme is needed.

More appropriately, a family of allocative schemes is obtained by considering different counts of poor persons under different poverty definitions. In columns (2) through (5) are the relative percentages of Federal funds that would go to each state under the four different poverty definitons. Table 8, columns (2) through (5), shows the relative percentages of Federal funds that would go to each state under four different poverty definitions. Whether one uses the current poverty definition, column (2), or the current definition without a farm adjustment, column (3), little allocative difference is seen.

For instance, the sixteen states and the District of Columbia, an area called the "South" made up of South Atlantic, East South Central, and West South Central divisions, would receive the largest share, about 45 percent of Federal poverty dollars, if Federal dollars were allocated to states on the basis of the current poverty definition. The states in the South, in general, have a greater poverty percentage than a population percentage. This means that distribution of funds to these states based on the official thresholds overcomes a needs difficulty presented with a strict per capita distributional scheme.

What happens if we use a relative poverty definition? In this case, the absolute number of poor increases in every state. However, regardless of whether one uses 50 percent of national median income or 50 percent of state median income, states that have relatively low average incomes would receive relatively less Federal dollars with a median income poverty standard than with a distributional scheme based on the current scores. The South under a national median income standard would receive about 43 percent of total Federal poverty funds. If a state median income standard were used, even fewer Federal dollars, roughly 39 percent, would go to the South. On the other hand, relatively high-income states, such as New York and New Jersey, stand to receive more Federal funds under a relative poverty definition. Between the two relative poverty definitions, use of a state median income results in more funds allocated to richer states and less funds allocated to poorer states.

Use of a national median income poverty standard can be generally stated as treating individuals or families in the nation equally who are equal in some reference category such as family income. However, state median income poverty standard says that a family with a 1969 annual income of $5,790 was poor if they lived in New Jersey, but not poor if they lived 10 miles away in New York. New Jersey will receive relatively more poverty dollars than New York, possibly because relatively more very rich persons live in New Jersey than New York. The point is that horizontal equity distribution norms can be approached locally, as for persons within a state, or nationally. If one allocates funds on the former basis, the pretransfer existence of rich persons in the tate serves to attract more Federal funds, but that is very similar to what is done under several existing Federal allocative schemes.

Allocative Implications from Families in Poverty by State and Poverty Definition

Table 9 presents data for families comparable to data presented in Table 8 for persons. Although the allocative weights differ between the two tables, quite similar patterns emerge when comparing allocative weights within a given state across different poverty definitions. The important points are: (1) In states with high (low) average family income, use of a relative poverty definition instead of the current definition increases (lowers) the percentage of national funds allocated to the state, and (2) within the category of relative poverty definitions, use of a standard based on state median income lowers (increases) the percentage of national funds allocated to states with median incomes below(above) the national average.

Geographic Distribution of Poor Children with 1970 Census Data and Title I, ESEA

Poverty Definitions of Title I of the 1974 Elementary and Secondary Education Act

The definition of poverty one selects can affect the eligible population and the distribution of funds for Federal programs. However, it is seldom the only factor. For example, the distribution formula used under Title I of ESEA to determine the eligible population in each state, involves counting three groups: children from families defined as poor under the official poverty standard; plus two-thirds of the children in families on Aid to Families with Dependent Children (AFDC) with income above the current year official standard for a family of four; plus children in state institutions such as those for orphaned or delinquent children. 53/ The actual payment rate depends not only on eligibility, but on the availability of Federal funds and a cost-of-schooling-per-child scale factor. It is useful to examine the effects of alternative poverty measures on the distribution of Federal funds in the context of these other factors. However, it is beyond the scope of this paper to analyze fully all the ramifications of alternative distribution formulas. Rather, in order to illustrate the general direction of changes in the context of the other factors, a descriptive treatment of simplified versions of the eligibility criteria of the Title I formula of the Elementary and Secondary Education Act is presented in the section.

First, we examine only the count of poor school-age children and consider the effect of annually distributing the estimated $1.9 billion dollars to the states under Title I of the Elementary and Secondary Education Act if the actual ESEA scheme were based only on the count of poor school children and did not use the adjustments for AFDC participation, per-pupil school costs, and the smoothing technique of lag-adjusting actual payments in one year based on a percentage of the previous year's actual payment.

Table 12, columns (3) through (6), shows a variety of counts of poor school children calculated by varying the poverty definition. For comparison, we also include the present and past counts of "educationally disadvantaged" school children as determined by an approximation to the Title I eligibility criteria. The reason Title I entries are an approximation is that we have not included the poor children of Puerto Rico, the Virgin Islands, and Guam, since we lack comparable poverty count information on those areas. If we use as an allocative criteria, the relative number of poor children in any one state, and assume no intrastate schooling cost adjustments, then we may use the poor children counts in the (a) columns to compute the percentages of allocative weights shown in the (b) columns.

Children defined as educationally disadvantaged according to the current and past versions of Title I are counted in columns (1a) and (2a), respectively. Differences in the row entries reflect mainly the change in the eligibility in which an absolute poverty threshold, $2,000 per family, was replaced with the official standard, a relatively absolute poverty threshold. The 1965 Title I standard, used to compute column (2) entries, was based on the sum of two groups: (1) children aged 5 to 17 years from families with incomes of less than $2,000 according to the 1960 Census; and (2) children from families on AFDC whose annual payments exceeded $2,000. By the early 1970's, AFDC participants had grown to such an extent that the AFDC factor was a dominant factor in the Title I fund distribution formula. For this reason the formula was amended by replacing the first factor, the absolute poverty threshold, with the current official poverty definition and including only two-thirds of the AFDC children. The entries in column (1) are made with the amended Title I.

In the remaining sections we use the eligibility portion of current Title I distribution formula as an actual distribution formula. In this discusion we first compare hypothetical Title I distributions with and without the AFDC add-on. Dropping the AFDC add-on means the hypothetical Title I fund distribution would be based solely on the existing official poverty standard. For comparison, we examine these hypothetical Federal fund allocative schemes with distributions implied by use of median family poverty standards, where median income is first national median income and next state median income. We conclude by offering an allocative scheme based on weighting counts of poor school children by median family incomes for states. The weights are intended to reflect vertical equity considerations.

If Poor School Children Count Replaced Title I Eligibility Criteria, Current Poverty Standard

Assume the basis on which to allocate Title I Federal funds is the number of related children of school age, 5 to 17 years, from families who are poor according to the current official standard.

Table 12. Total and Percentages of Poor, Related Children Aged 5 to 17 Years, by Area, State, and Poverty Definition (in thousands)

	(1) Estimated Eligible 5-17 Population - PL 89-10 Title I for FY 1976		(2) Eligible under 1972 Title I		(3) Number Related Children 5-17 Years in Poverty Current Definition		(4) Current Poverty Thresholds for Nonfarm Adjustments		(5) One-Half National Family Median Income with SSA Nonfarm Adjustments		(6) One-Half State Family Median Income with SSA Nonfarm Adjustments	
	a Total	b Percentage of National Total	a Total	b Percentage of National Total	a Total	b Percentage of National Total	a Total	b Percentage of National Total	a Total	b Percentage of National Total	a Total	b Percentage of National Total
U.S. Total	8705.6		5567.4		7930.2		8030.0		13349.2		13007.3	
New England	333.8	3.83	.49	5.20	268.5	3.39	2687	3.35	4755	3.56	4944	3.79
Maine	40.1	.46	27.4	.50	36.4	.46	36.4	.45	47.5	.36	47.5	.36
New Hampshire	17.2	.20	9.9	.20	15.5	.20	15.7	.20	33.8	.25	31.2	.24
Vermont	15.8	.18	9.3	.20	14.3	.18	14.3	.18	28.8	.22	24.1	.18
Massachusetts	157.6	1.81	146.5	2.60	121.8	1.54	121.8	1.52	226.5	1.70	233.9	1.79
Rhode Island	29.6	.34	25.8	.50	28.1	.35	28.1	.35	46.2	.35	43.0	.33
Connecticut	73.5	.84	64.5	1.20	52.4	.66	52.4	.65	92.7	.69	114.7	.88
Mid Atlantic	1384.6	15.90	1296.7	23.20	10298	12.99	10330	12.86	18354	13.75	18819	14.43
New York	788.8	9.06	747.9	13.40	562.4	7.09	563.7	7.02	9529	7.14	1024.6	7.86
New Jersey	215.8	2.48	223.6	4.00	150.6	1.90	151.1	1.88	2773	2.08	334.3	2.56
Pennsylvania	380.0	4.36	325.2	5.80	316.8	13.99	318.2	3.96	6052	4.53	5230	4.01
East North Central	1271.3	14.60	908.7	16.40	10385	13.10	10580	13.18	19293	14.45	21550	16.53
Ohio	290.8	3.34	217.5	3.90	284.8	3.59	288.7	3.60	5252	3.93	547.6	4.20
Indiana	133.2	1.53	73.6	1.30	119.4	1.51	123.3	1.54	2506	1.88	282.5	2.17
Illinois	390.7	4.49	315.1	5.70	306.9	3.87	308.9	3.85	5371	4.02	628.3	4.82
Michigan	325.9	3.74	232.5	4.20	219.8	2.77	222.1	2.77	3911	2.93	465.0	3.57
Wisconsin	130.7	1.50	70.0	1.30	107.6	1.36	115.0	1.43	2253	1.69	231.6	1.78
West North Central	559.3	6.43	327.0	5.80	5358	6.76	5598	6.97	12411	9.30	9615	7.37
Minnesota	115.5	1.33	71.5	1.30	97.0	1.22	104.4	1.30	2067	1.55	221.4	1.70
Iowa	83.6	.96	49.8	.90	73.8	.93	78.0	.97	1606	1.20	141.7	1.09
Missouri	178.7	2.05	94.6	1.70	177.3	2.24	180.9	2.25	3062	2.29	288.3	2.21
North Dakota	28.1	.32	12.9	.20	30.3	.38	31.7	.39	566	.42	46.1	.35
South Dakota	36.0	.42	17.9	.30	32.3	.41	34.3	.43	677	.51	47.7	.37
Nebraska	48.0	.55	30.3	.50	52.5	.66	55.6	.69	1026	.78	94.7	.73
Kansas	69.4	.80	50.0	.90	72.6	.92	74.9	.93	1340	1.00	121.6	.93
South Atlantic	1656.1	19.03	725.0	13.10	1651.3	20.82	1667.5	20.77	2619.9	19.63	2407.6	18.47
Delaware	18.8	.22	10.8	.20	18.8	.24	18.8	.23	34.2	.26	35.4	.27
Maryland	127.0	1.46	97.0	1.70	112.9	1.42		1.41	194.1	1.45	227.0	1.74
District of Columbia	46.9	.54	43.7	.80	39.3	.50	39.3	.49	61.8	.46	65.8	.50
Virginia	222.8	2.56	110.8	2.00	216.8	2.73	219.3	2.73	364.0	2.73	345.2	2.65

Table 12. (Continued)

	(1)		(2)		(3)		(4)		(5)		(6)	
	a	b	a	b	a	b	a	b	a	b	a	b
West Virginia	109.0	1.25	50.2	.90	112.8	1.42	113.6	1.41	179.2	1.34	132.9	1.02
North Carolina	319.5	3.67	123.6	2.20	308.5	3.89	314.4	3.92	493.0	3.69	424.0	3.25
South Carolina	208.9	2.40	75.8	1.40	216.9	2.74	221.0	2.75	315.2	2.36	278.3	2.13
Georgia	297.8	3.42	93.1	1.70	310.7	3.92	313.2	3.90	474.2	3.55	447.4	3.43
Florida	305.4	3.51	120.0	2.20	314.6	3.97	314.6	3.92	504.2	3.78	451.6	3.46
East South Central	1000.7	11.50	375.9	6.80	1009.1	12.72	1027.6	12.80	1521.4	11.40	1261.0	9.67
Kentucky	212.9	2.45	98.3	1.80	210.0	2.65	217.1	2.70	338.6	2.54	277.2	2.13
Tennessee	248.9	2.86	81.8	1.50	252.2	3.18	256.8	3.20	398.6	2.99	322.9	2.48
Alabama	275.3	3.16	97.1	1.70	285.2	3.60	288.3	3.59	413.2	3.10	361.4	2.77
Mississippi	263.6	3.03	98.7	1.80	261.7	3.30	265.4	3.31	371.0	2.77	299.5	2.30
West South Central	1239.5	14.24	469.2	8.40	1259.9	15.89	1270.6	15.82	1957.8	14.67	1768.8	13.57
Arkansas	156.6	1.80	52.2	.90	161.3	2.03	163.4	2.03	240.1	1.80	185.7	1.42
Louisiana	313.3	3.60	126.6	2.30	327.6	4.13	330.2	4.11	476.1	3.57	410.3	3.15
Oklahoma	125.5	1.44	32.5	.60	120.5	1.52	122.7	1.53	199.1	1.49	174.2	1.34
Texas	644.1	7.40	257.9	4.60	650.5	8.20	654.3	8.15	1042.5	7.81	998.6	7.66
Mountain	353.3	4.05	207.5	3.6	352.3	4.44	355.7	4.43	604.2	4.52	619.9	4.77
Montana	26.1	.30	13.8	.2	25.7	.32	25.9	.32	55.9	.42	53.0	.41
Idaho	25.3	.29	13.0	.2	23.5	.29	24.2	.30	47.2	.35	36.4	.28
Wyoming	10.4	.12	5.1	.1	9.1	.11	9.5	.12	20.6	.15	20.1	.15
Colorado	77.2	.88	57.9	1.0	78.5	.99	80.3	1.00	138.0	1.03	137.6	1.06
New Mexico	81.8	.94	43.1	.8	87.9	1.11	88.1	1.11	119.7	.89	166.2	1.28
Arizona	86.5	.99	47.0	.8	85.0	1.07	85.0	1.06	137.6	1.03	129.2	.99
Utah	34.5	.40	21.2	.4	31.5	.39	31.6	.39	63.2	.47	52.3	.40
Nevada	11.5	.13	6.4	.1	11.1	.14	11.1	.14	22.0	.16	25.1	.19
Pacific	906.8	10.42	912.2	16.5	785.0	9.90	789.1	9.82	1330.0	9.96	1533.6	11.79
Washington	98.9	1.14	66.8	1.2	77.5	.98	79.0	.98	142.1	1.06	155.6	1.19
Oregon	64.6	.74	47.3	.8	58.8	.74	59.5	.73	106.8	.80	108.2	.83
California	703.5	8.08	780.8	14.0	617.6	7.78	619.5	7.71	1022.8	7.66	1198.3	9.21
Alaska	14.5	.17	8.7	.2	9.1	.11	9.1	.11	16.6	.12	22.6	.17
Hawaii	25.3	.29	18.6	.3	22.0	.28	22.0	.27	41.7	.31	48.9	.38

SOURCE: Column (1) entries are processed data, excluding Puerto Rico, from "Estimated distribution of funds under provisions of PL 89-10, Title I, Part A, as amended: FY 1977" — DHEW:OE:NCES, September 22, 1975. Column (2) is processed from data in Table I, "Number of Low Income Children under Original Grant Eligibility Standard, 1965-1972," in August, 1975 paper by Alan Ginsburg and Charles Cook (see footnote #53).
Column (3) Special tabulations.
Column (4) Special tabulations.
Column (5) Special tabulations (Kahn-Miller).
Column (6) Special tabulations (Kahn-Miller).

Use of this standard implies, of course, adjustments for family size and composition, age and sex of family head, and farm/nonfarm adjustments. The percentage entries for the official standard in column (4b) can be compared to the corresponding figures in column (1b), which show current Title I percentages. For several states, such as Maine, Iowa, or Hawaii, the relative share of Federal funds received would change not at all or only slightly. For other states, notably those in the Mid Atlantic and East South Central areas, rather sharp differences emerge. These changes are attributable to the exclusion of the AFDC add-on in the column (4) figures. For example, under the existing Title I standard nearly 16 percent of the population of Title I eligibles reside in Mid Atlantic states. Were eligibility determined solely by the current poverty official standard, these states would have roughly 20 percent fewer Title I eligibles. The opposite effect occurs in the East South Central States and other states with relatively low AFDC standards. Would such shift in the allocation of funds be desirable?

One can well imagine that the degree of "desirability" estimated from the allocative shift might depend on many factors such as where one happened to live, the level of family income, and the presence of children. One criteria, one less subjective than the attitudes of individuals, such as state legislators who set AFDC standards, is target efficiency. By this criterion states should receive Federal educational fund supplements in proportion to the number of educationally-disadvantaged school children (estimated by the number of income-disadvantaged, or poor school children) in the state. Target efficiency may be better served by a distribution scheme based only on a definition of poverty.

If one accepts the goal of target efficiency in Title I fund distribution and that such a goal is served by a single poverty definition allocative scheme, one must next address the issue of which poverty definition should be used. What are the effects of selecting as a distribution base the existing definition or a relative poverty definition? Furthermore, what difference do refinements such as farm versus nonfarm scales and state versus national family median incomes make with regard to the distribution of Title I funds? Finally, is it sufficient to count merely the poor school children? Is it not desirable to incorporate, in some way, an estimate of relative need in the allocation of Federal funds? We next examine these issues.

Table 12, columns (4a) and (4b), shows respectively, the total number of poor school children by state using the current official standard without a farm adjustment. The decimals in column (4b) can be regarded as weights to use in distributing Federal funds. For example, if $1 billion were to be distributed among the 50 states and the District of Columbia solely on the percentage of the nation's poor children in a particular state, with no cost-of-schooling adjustment factor, then the state of Maine would receive 0.45 percent or $4.5 million. In general, there are only minor differences in the figures in columns (3b) and (4b). In other words, dropping the farm poverty threshold differential in the current poverty standard would make little difference in the relative allocation of Title I funds if the latter distribution formula were based only on counts of poor children.

Relative Poverty Standard with National Family Income Median

If one counted poor school children using a relative poverty definition instead of the current official poverty definition, what does this imply with regard to the geographic distribution of poor children and the associated allocation of Federal funds to the various states? In addition, within a relative poverty definition, we again focus on the impact made by the choice of a state versus a national median income standard. Finally, we compare each relative poverty definition to the current method of determining eligibility for Title I funds.

Consider Table 12 and the entries in columns (4) and (5). If one counts poor children on a relative income basis, there is roughly a 66 percent increase in the number of poor children over the official definition method. This is a national average. Between various states certain patterns emerge. First, notice the effect on states with large populations, including many poor children. Nearly one out of three poor children using the relative poverty definition live in either New York, Pennsylvania, Illinois, Texas, or California. For New York, Pennsylvania, and Illinois, northern states with large urban centers, the relative amount of poor children increases if one uses a poverty standard based on median income. For Texas and California, the number of poor children increases absolutely, but as a percent of the nation's total poor children, declines are observed. Next, consider the states by income extremes. The Mid Atlantic and East North Central States, in general, in 1969, had median family income above the national average. In contrast, the South Atlantic, East South Central, and West South Central States had below national average family incomes. We refer to the former as relatively rich and the latter as relatively poor. In the relatively rich states, replacing the current official poverty measure with a median-income-based relative poverty measure increases the relative number of poor children. For the relatively poor states, the same change leads to a lower percentage of the nation's poor children.

Relative Poverty Standard with State Family Income Median

We can extend the comparison to include relative poverty based on one-half of median income for the states by comparing the entries in columns (4b), (5b), and (6b). Two important results emerge. For the relatively rich states, we find use of state median income nearly doubles the number of poor children over the official measures and also causes a rise in the percentage of the nation's poor found in those states. For the relatively poor states, there is an absolute increase in the number of poor children as we change poverty definitions from the current definition to one based on state median income, but this increase is so small that relatively fewer poor children are found in those states than before.

A second result is that regardless of which median income standard is chosen, state or national, a relative poverty standard results in relatively more poverty among school children in richer states than if one uses the official definition.

For a distributional view, richer states will receive relatively more funds than poorer states on an allocative scheme based on either median income poverty definition as opposed to a distribution scheme based on the current standard. Secondly, within the relative poverty definitions, a state-based median income poverty standard implies more funds for richer states and less funds for poorer states than would occur if a national median income were used.

The premises underlying the above conclusion are that (a) the distribution of Federal funds to impoverished school children is based solely on poverty counts, not poverty counts and AFDC participant counts, and (b) cost-of-schooling adjustments do not affect the main qualitative conclusions. Khan and Miller reached the conclusion that absolute versus relative poverty definitions would not appreciably alter the allocation of Title I funds among the states. However, they sought to replicate the actual Title I eligibility and distribution formula, whereas I deliberately eschewed the AFDC participant adjustment which has regional implications. In addition, Khan and Miller made no adjustment for family size and composition or farm/nonfarm residence when comparing absolute and relative poverty. Given the importance of equivalency scales from a conceptual standpoint, it is possible that their estimates of Title I impacts were affected by not adjusting for equivalent income. 54/ What are the distributional implications of continuing to assume school costs do not matter and replacing the Title I eligibility criteria with a relative poverty definition? To answer this question compare the entries in columns (1b) and (6b). What such a comparison really reveals is the impact using relative measures as the basis for distributing funds, rather than the present formula which includes consideration of AFDC counts as well as poverty counts. As AFDC eligibility rules do not cluster according to census area, it is difficult to generalize. For southern states, there is a slight tendency to increase the percentage of eligibles using a national median income poverty standard and decrease the percentage of eligibles using state median income poverty measure. For northeastern states, use of either median income standard reduces the percentage of eligibles below that currently in use for Title I.

Alternative Distribution

Table 13 shows several illustrative Federal fund allocative schemes under several poverty definitions. Poor school-aged children counts form the base on which the allocative weights are built. Columns (1), (2), and (3) show, respectively, official definition national median, income and state median income poverty counts. These entries repeat the column percentages of Table 9. As we mentioned earlier, under a distribution formula based on the number of poor in a state as a percentage of the nation's poor, relatively rich states stand to receive more funds than poorer states if one uses a median poverty definition than with the current poverty definition. Is such a result really fair? That is, many would agree that such an effect runs counter to the concept of vertical equity. Vertical equity issues are usually raised with regard to comparisons of, for instance, tax burden on individuals of different income levels Comparing states of different income levels is similar, but not exactly the same thing.

If we assume that the income distribution shapes are similar from one state to another and that only the median incomes differ, then one way to achieve parity between the distribution of Federal funds to poor school children in a relatively low-income state and poor school children in a relatively rich state is to weight the counts of poor students by the reciprocal of the median income of the state. In this manner, one can avert the questionable distributional consequences noted above when we based distribution schemes solely on a median income poverty definition, especially state median income.

Columns (5), (6), and (7) present relative allocative weights associated with official definition, national median income, and state median income poverty standards, respectively. The effect of adding the inverse of state median income is to allocate fewer Federal funds to states that are already relatively well-off. For example, according to Table 9, column (1), which shows entries for Title I allocative weights if current eligibility criteria were used as a distributional criteria, shows that New York would receive over 9 percent of the nearly $1.9 billion distributed annually under Title I. This assumes no school cost adjustment in the current scheme, but includes AFDC participation. If we drop the AFDC factor in the current scheme and base an allocative scheme on the percentage of the nation's poor children living in a state and weight that scheme by the inverse of average income in the state, New York, according to Table 10, column (5), would receive 5.78 percent of total Title I funds. Similarly, Illinois, now receiving 4.49 percent, would receive 3.05 percent under the revised scheme. Relatively low-income states, however, would experience the reverse tendency. South Dakota in 1969 had a median family income of $7,490 as opposd to $9,560 for the nation. Hence, South Dakota would increase its share of Title I funds from 0.42 percent to 0.50 percent. The low increase reflects

Table 13. Poor, Related Schoolchildren: Weighted Distributional Schemes Using Alternative Poverty Counts and State Median Family Income for 1970

	(1) Poverty Numbers Based on Current Poverty Thresholds (Nonfarm)	(2) Poverty Numbers Based on One-Half National Median Family Income Using SSA, Nonfarm Equivalency Scales	(3) Poverty Numbers Based on One-Half State Median Family Income Using SSA, Nonfarm Equivalency Scales	(4) 1969 Median Family Income	(5) Allocation Scheme Set by Percentage of Nation for Product of Col (1) x 1/Col (4)	(6) Allocation Scheme Set by Percentage of Nation for Product of Col (2) x 1/Col (4)	(7) Allocation Scheme Set by Percentage of Nation for Product of Col (3) x 1/Col (4)
U.S. Total	8030.0	13349.2	13007.3	9596			
New England	268.7	471.9	494.4	10731	2.84	3.12	3.24
Maine	36.4	47.5	47.5	8220	.48	.40	.40
New Hampshire	15.7	33.8	31.2	9698	.18	.24	.22
Vermont	14.3	28.8	24.1	8974	.17	.22	.18
Massachusetts	121.8	226.5	233.9	10981	1.22	1.43	1.48
Rhode Island	28.1	42.6	43.0	9734	.31	.30	.30
Connecticut	52.4	92.7	114.7	12045	.47	.53	.66
Mid Atlantic	1033.0	1835.4	1881.9	10472	10.86	12.24	12.48
New York	563.7	952.9	1024.6	10719	5.78	6.18	6.66
New Jersey	151.1	277.3	334.3	11589	1.42	1.66	2.01
Pennsylvania	318.2	605.2	523.0	9568	3.64	4.40	3.81
East North Central	1058.0	1929.3	2155.0	10660	10.88	8.59	14.09
Ohio	288.7	525.2	547.6	10376	3.05	.64	3.68
Indiana	123.3	250.6	282.5	9967	1.35	.61	1.97
Illinois	308.9	537.1	528.3	11096	3.05	3.36	3.94
Michigan	222.1	391.1	465.0	11174	2.17	2.43	2.90
Wisconsin	115.0	225.3	231.6	10080	1.25	1.55	1.60
West North Central	559.8	1034.4	961.5	9017	6.90	8.06	7.47
Minnesota	104.4	206.7	221.4	9928	1.15	1.44	1.55
Iowa	78.0	160.6	141.7	9055	.94	1.23	1.09
Missouri	180.9	306.2	288.3	8935	2.22	2.38	2.25
North Dakota	31.7	56.6	46.1	7836	.44	.50	.41
South Dakota	34.3	67.7	47.7	7490	.50	.62	.44
Nebraska	55.6	102.6	94.7	8597	.70	.83	.76
Kansas	74.9	134.0	121.6	8725	.94	1.06	.97

Table 13. (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
South Atlantic	1667.5	2619.9	2407.6	8564	22.06	21.88	19.97
Delaware	18.8	34.2	35.4	10255	.20	.23	.24
Maryland	113.3	194.1	227.0	11206	1.10	1.20	1.41
District of Columbia	39.3	61.8	65.8	9606	.44	.44	.47
Virginia	219.3	354.0	345.2	9076	2.64	2.79	2.65
West Virginia	113.6	179.2	132.9	7414	1.68	1.68	1.25
North Carolina	314.4	493.0	424.0	7770	4.43	4.41	3.80
South Carolina	221.0	315.2	278.3	7620	3.17	2.87	2.54
Georgia	313.2	474.2	447.4	8174	4.20	4.03	3.81
Florida	314.6	504.2	451.6	8274	4.16	4.23	3.80
East South Central	1027.6	1521.4	1261.0	7166	16.12	15.08	12.52
Kentucky	217.1	338.6	277.2	7439	3.19	3.16	2.59
Tennessee	256.8	398.6	322.9	7446	3.78	3.72	3.02
Alabama	288.3	413.2	361.4	7263	4.35	3.95	3.47
Mississippi	265.4	371.0	299.5	6068	4.79	4.25	3.44
West South Central	1270.6	1957.8	1768.8	7964	17.83	17.36	15.61
Arkansas	163.4	240.1	185.7	6271	2.85	2.66	2.06
Louisiana	330.2	476.1	410.3	7527	4.80	4.40	3.80
Oklahoma	122.7	199.1	174.2	7720	1.74	1.79	1.57
Texas	654.3	1042.5	998.6	8514	8.42	8.51	8.18
Mountain	355.7	618.6	573.5	9112	4.40	4.81	4.45
Montana	25.9	55.9	53.0	8547	.33	.45	.43
Idaho	24.2	47.2	36.4	8405	.32	.39	.30
Wyoming	9.5	20.6	20.1	9030	.11	.15	.15
Colorado	80.3	138.0	137.6	9568	.92	1.00	1.00
New Mexico	88.1	134.1	119.7	7845	1.23	1.18	1.06
Arizona	85.0	137.6	129.3	9206	1.01	1.03	.97
Utah	31.6	63.2	52.3	9342	.37	.47	.38
Nevada	11.1	22.0	25.1	10779	.11	.14	.16
Pacific	789.1	1330.0	1533.6	10691	8.01	8.62	9.95
Washington	79.0	142.1	155.6	10489	.82	.94	1.03
Oregon	59.5	106.8	108.2	9498	.68	.78	.79
California	619.5	1022.8	1198.3	10828	6.27	6.57	7.71
Alaska	9.1	16.6	22.6	12507	.08	.09	.13
Hawaii	22.0	41.7	48.9	11664	.20	.24	.29

SOURCE: Special tabulations prepared by the Bureau of the Census.
Column (1), Same as Column (4), Table 12.
Column (2), Same as Column (5), Table 12.
Column (3), Same as Column (6), Table 12.
Column (4), Same as Column (5), Table 10.

the fact that relatively few poor children live in South Dakota. Poor southern states with many poor children, such as Alabama, would stand to increase their share of Title I funds from 3.16 percent to 4.35 percent. Other comparisons can be made for other states.

Several criticisms can be made of the proposed alternative Title I distribution scheme. First, the data base reflect 1969 conditions which may not be relevant today in 1977. This points to a need for state-reliable income data to be collected more frequently than every ten years. The current official poverty lines are updated each year by the CPI, but changes in the relative geographic location of the poor are not estimated in the alternative scheme we propose (or in the current Title I scheme). Secondly, the goal of Title I is to provide aid to educationally disadvantaged children. We have not provided school-district-specific poor counts.

A third criticism also points to the need for more data. Implied in the state income-weighting procedure is the assumption that real income does not vary between states. This assumption is consistent with most Federal administrative uses of SSA poverty standards, but may be an incorrect assumption. If high-income states also have high relative prices of goods and services and if high-income states have relatively greater gaps between their educational needs and their local fiscal capacity, then use of the income inverse weight may have been too severe in high-income states. What is needed are state-specific measures of real gaps between needs and fiscal capacity. As an intermediate step in this process, state-specific average prices for goods and services could also be used to adjust current poverty lines.

We conclude that these criticisms are general criticisms which can be applied to the current Title I scheme and are not unique to the alternatives we examined.

Two alternative distribution schemes are shown in columns (6) and (7) of Table 13. These are based on the relative poverty standards we have been discussing plus the income reciprocal used to weight current poor children counts. The entries are provided for interested readers.

CONCLUSION

This paper includes a general view of important issues one must consider in developing economic definitions of poverty. How the poverty standard is set and how it is adjusted over time are two important aspects in distinguishing the two main alternative poverty definitions: absolute and relative poverty. In the conceptual section, we also review carefully the components of income, equivalency scales, and geographic cost-of-living differences, each an important aspect of the current official poverty standard and of relative poverty measures.

In the empirical section, we compare poverty counts with the current official poverty definition to one based on one-half median family income. Comparisons are made according to characteristics of the poor and geographical location of the poor. Changes in poor family characteristics and geographical distribution between 1967 and 1973 were also examined. Finally, we examine empirically selected examples of how choice of a poverty definition alters the distribution of Federal funds to the states. No exact distribution formulas are used, but the directional changes in relative allocation weights associated with the current definition versus medium income-based poverty are probably reliable estimates of actual directional changes. Within the program review, particular attention is given to Title I, ESEA, implications. Several alternative schemes to the current Title I allocative formula are developed for illustrative purposes which are based, in part, on relative poverty definitions.

To be "officially," "statistically" poor in this country has meant, for the last decade or so, to have an annual income which is below the appropriate cell in the 124-cell-matrix of official income thresholds. In recent years, however, increasing program use has been made of a median income-based poverty standard. Aside from a review of conceptual problems common to either poverty standard, the main contribution of this paper has been an empirical, tabular analysis of these two concepts of poverty.

FOOTNOTES

1. See Henry C. Simons, Personal Income Taxation, The Definition of Income as a Problem of Fiscal Policy (Chicago: University of Chicago Press, 1938). Also, William A. Klein, "The Definition of Income Under a Negative Income Tax," Florida State University Law Review, Vol. 2, No. 3, Summer 1974: 449-491.

2. John R. Hicks, Value and Capital, 1st edition (Oxford: Clarendon Press, 1939) p. 172.

3. I am indebted to David Lindeman for this distinction.

4. Hicks, op cit, p. 176.

5. For further discussion of this point and other conceptual issues in defining income, see F. Thomas Juster, "A Framework for the Measurement of Economic and Social Performance" in The Measurement of Economic and Social Performance, Studies in Income and Wealth, 38 (New York: National Bureau of Economic Research, 1973) and R. H. Parker and G. C. Harcourt, Readings in the Concept and Measurement of Income, Cambridge University Press, 1969.

6. Terence Kelly, "Poverty Flows" in The President's Commission on Income Maintenance, 1969. Also see, The Measure of Poverty, Technical Paper No. XVII.

7. See a series of articles by Reuben Gronau, e.g., "Wage Comparisons - A Selectivity Bias," Journal of Political Economy, 1974, Vol. 82, pp. 1119-1143.

8. F. Kleinwachter, Das Einkommen und seine Verteilung (Leipzig, 1896), pp. 1-16. Cited in Simons, op cit.

9. Ismail Abdel-Hamid Sirageldin in Non-Market Components of National Income (Ann Arbor: Institute for Social Research, University of Michigan, 1969).

10. See John S. Akin and Stanley P. Stephenson, Jr., "Regional Impacts of Inflation," Review of Regional Studies (forthcoming).

11. Several studies have examined the impact on measured income distributions of imputing a value to the service flow from an asset stock. Mollie Orshansky, in "How Poverty Is Measured," Monthly Labor Review, February 1969, says that to ignore assets (in measuring income) is a serious defect. Yet, she points out that Dorothy Projector and Gertrude Weiss found, except among the aged, only few low-income households have many assets, in Survey of Financial Characteristics of Consumers (Washington Federal Reserve System, 1966). Also see Burton A. Weisbrod and W. Lee Hansen, "An Income-Net Worth Approach to Measuring Economic Welfare," American

Economic Review (December 1968), pp. 1315-1329 and Michael K. Taussig, Alternative Measures of the Distribution of Economic Welfare (Princeton: Industrial Relations Section, Princeton University, 1973). The latter two studies estimated families' well-being as money income plus the annuity value of net worth less property income, such as rents and dividends, already included in money income. Taussig, using a relative poverty standard, found that fewer whites were poor after adding net worth than before, which supports the previous studies. For blacks, however, he found more poverty with net worth added, since few aged blacks have assets (Ibid, p. 39). The main point for us is that each of these studies had to deal subjectively with a variety of conceptual decisions regarding asset value. In this section we consider a few such decisions.

12. Klein, op cit.

13. See Simon, op cit, p. 47.

14. J. Tobin, J. Pechman, P. Mieszkowski, "Is a Negative Income Tax Practical?" 77, Yale Law Journal 1, 1967.

15. For an analysis of government tax burden and expenditure by income class see W. Irwin Gillespie, "Effect of Public Expenditures on the Distribution of Income" in Richard A. Musgrave, editor, Essays in Fiscal Federalism, Washington, D.C., The Brookings Institution, 1965. Also see Joseph A. Pechman, "Distribution of Income Before and After Federal Income Taxes, 1941 and 1947" in Conference on Research in Income and Wealth, Studies in Income and Wealth, 13, New York, National Bureau of Economic Research, 1951. Also see, Taussig, op cit. pp. 15-21.

16. These issues are discussed in Taussig, op cit, pp. 15-21.

17. See Jan Peskin, "In-kind Income and the Measurement of Poverty," this volume. Also see Timothy Smeeding and the "Anti-Poverty Effectiveness of Cash and Non-Cash Transfer Programs" (Ph.D. dissertation, University of Wisconsin, 1975).

18. Robert D. Plotnick, "The Measurement of Poverty" in Plotnick and Skidmore, ed., Progress Against Poverty (New York: Academic Press, 1975) pp. 34-35. I also am grateful to Dr. Plotnick for a note regarding this point.

19. For additional discussion, see "The Measure of Poverty."

20. The first part of this question has received considerable attention from analysts. For example, see Robert J. Lampman, "Measured Inequality of Income: What Does It Mean and What Can It Tell Us?" in The Annals, 1973, p. 83.

21. Peter Townsend, "The Meaning of Poverty," *The British Journal of Sociology*, XVIII, No. 3, September, 1962, pp. 210-227.

22. Mollie Orshansky, "Children of the Poor," *Social Security Bulletin*, July 1963, and "Counting the Poor: Another Look at the Poverty Profile," *Social Security Bulletin*, January 1965.

23. Mollie Orshansky, "Counting the Poor: Another Look at the Poverty Profile," p. 9.

24. See, "The Thrifty Food Plan," Consumer and Food Economics Institute, U.S. Department of Agriculture, September 1975. The thrifty food plan replaces the economy food plan. See also, the 1965 Food Expenditure Survey and 1975 Food Plan derivations, U.S. Department of Agriculture. Israel Putnam has suggested to me that methodological problems may exist because of delays between the time foods are priced and used to compute food plans and the time such plans are used to update poverty lines. Interim changes in relative food prices are not considered.

25. Ernst Engel as quoted in Zimmerman, Carle C., *Consumption and Standards of Living* (New York: Van Nostrand Co., 1936) p. 99. Cited in Carolyn Jackson, op cit, 1968.

26. Milton Friedman, "A Method of Comparing Incomes of Families Differing in Composition," in *Studies in Income and Wealth*, 15 (New York: National Bureau of Economic Research, 1952) pp. 9-24.

27. Parts of the following presentation follow that of Harold W. Watts, "The Iso-Prop Index: An Approach to the Determination of Differential Poverty Income Thresholds," *The Journal of Human Resources*, Vol. II, No. 1, Winter, 1967. See also, Joseph J. Seneca and Michael K. Taussig, "Family Equivalency Scales and Personal Tax Exemptions for Children," in *The Review of Economics and Statistics*, August 1971.

28. Elliot Wetzler, Determination of Poverty Lines and Equivalent Welfare, Research Paper, p. 277, Institute for Defense Analyses, September 1966, 23 pp. Also see a review of the basic literature in Carolyn A. Jackson, *Revised Equivalence Scales for Estimating Equivalent Incomes or Budget Costs by Family Type*, U.S. Department of Labor, Bureau of Labor Statistics, Bulletin No. 1570-2, U.S. Government Printing Office, November 1968.

29. This discussion follows that found in Lee Rainwater, *What Money Buys* (New York: Basic Books, 1974) especially pp. 104-106.

30. Watts, op cit, p. 4.

31. Akin and Stephenson, op cit.

32. Poverty Amid Plenty: The American Paradox, The Report of the President's Commission on Income Maintenance Programs. Washington: U.S. Government Printing Office, 1969, p. 37.

33. Theodore W. Schultz, "Investing in Poor People: An Economist's View," American Economic Review, Papers and Proceedings, May 1965, pp. 511-512.

34. Harry G. Johnson, "Approaches to the Reduction of Poverty: II," comment on paper by Professor Lampman at the 1964 American Economic Association meetings, reprinted in Edward C. Budd, ed., Inequality and Poverty (New York: W. W. Norton, 1967) p. 183.

35. Burton A. Weisbrod, The Economics of Poverty (Englewood Cliffs, N.J.: Prentice-Hall, 1965) p. 13.

36. Robert W. Kilpatrick, "The Income Elasticity of the Poverty Lines," Review of Economics and Statistics, 1973.

37. For example, see Oscar Ornati, Poverty Amid Affluence (New York: Twentieth Century Fund, 1966) and Eugene Smolensky, "The Past and Present Poor" in U.S. Chamber of Commerce, Task Force on Economic Growth and Opportunity. The Concept of Poverty (Washington, D.C.: U.S. Chamber of Commerce, 1965) pp. 35-67. Also see discussion by Herman Miller in M. S. Gordon, ed., Poverty in America (San Francisco: Chandler, 1965) pp. 85-101.

38. Martin Rein, "Problems in the Definition and Measurement of Poverty," in Poverty in America, ed. Louis A. Ferman et al (Ann Arbor: University of Michigan Press, 1968) pp. 116-133. Also see further discussion on externality attributes of poverty in Eugene Smolensky, "Investment in the Education of the Poor: A Pessimistic Report," American Economic Review, May 1966.

39. Gerald Rosenthal, "Identifying the Poor: Economic Measures of Poverty," in On Understanding Poverty, Daniel P. Moynihan, ed. (New York: Basic Books, 1969) p. 334.

40. Mary Jean Bowman, "Poverty in an Affluent Society" in Neil W. Chamberlain, Contemporary Economic Issues (Homewood, Ill.: Irwin, 1969) pp. 53-54.

41. Victor Fuchs, "Toward a Theory of Poverty" in The Concept of Poverty (Washington, D.C.: Chamber of Commerce, 1965) pp. 71-91. Also, see his "Redefining Poverty and Redistributing Income," The Public Interest, No. 8, Summer 1967, pp. 88-95.

42. Bowman, ibid.

43. Also see, D. J. Aigner and A. J. Heins, "A Social Welfare View of the Measure of Income Equality," Review of Income and Wealth, Series 13 (March 1967) pp. 12-25.

44. Lester C. Thurow, Poverty and Discrimination (Washington, D.C.: The Brookings Institution, 1969) p. 21.

45. Ibid, p. 23.

46. Kilpatrick, op cit.

47. Ibid, p. 327. Also see Thurow, op cit, pp. 21-22.

48. Two recent studies which also include empirical comparisons of absolute versus relative poverty include Lawrence Brown, "Characteristics of Low-Income Populations under Alternative Poverty Definitions," Technical Paper XVIII, The Measure of Poverty, 1976, and Robert D. Plotnick and Felicity Skidmore, op cit.

49. U.S. Bureau of the Census, Current Population Reports, Series P-60, No. 98, "Characteristics of the Low-Income Population: 1973," U.S. Government Printing Office, Washington, D.C., 1975.

50. See U.S. Department of Health, Education, and Welfare, Aid to Families with Dependent Children: Standards for Basic Needs, July 1974, DHEW # SRS 75-03200, p. 7.

51. Median income derived from Table 345, "Median Income in 1969 of Families, etc.," U.S. Bureau of the Census, Census of the Population 1970, Detailed Characteristics, Final Report PC (1) D1.

52. See paper "Administrative and Legislative Uses of the Terms," "Low Income," and "Other Related Items," this volume.

53. Alan Ginsburg and Charles Cook,"Education's Need for Small Area Low-Income Data with Reference to Title I, ESEA," presented at 17th Meeting of the American Statistical Association, Atlanta, Georgia. Also see, Abdul Khan and Herman Miller, "Implications of Alternative Measure of Povery on Title I of the Elementary and Secondary Education Act," Technical Paper XVI, The Measure of Poverty, 1976.

54. Abdul Khan and Herman Miller, op cit.